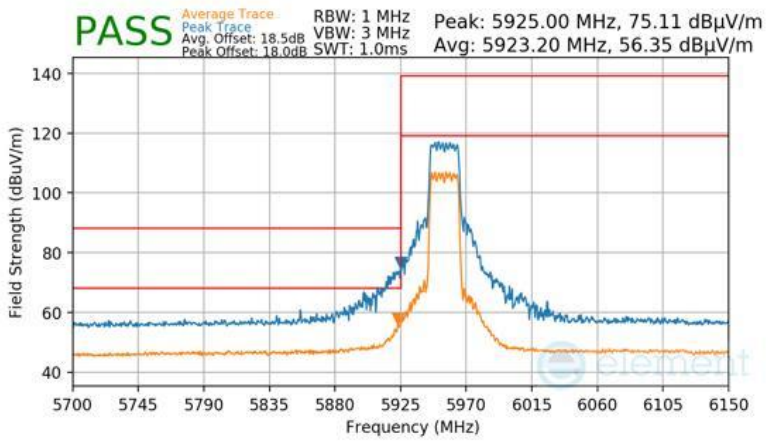
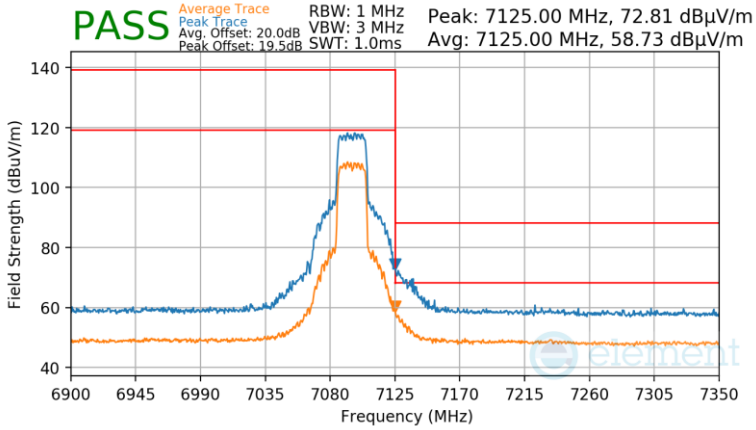
RU242

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	5955MHz
Channel:	1



Plot 7-1133 CDD Primary Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	5955MHz
Channel:	229



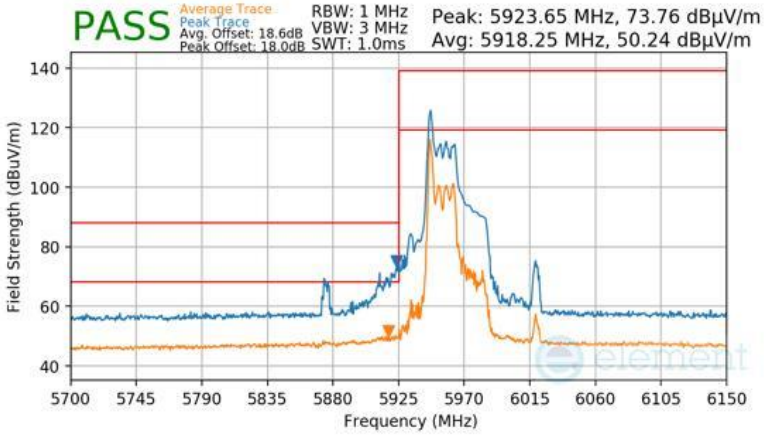
Plot 7-1134 CDD Primary Radiated Upper Band Edge (Peak & Average – UNII Band 8)

7.7.16 CDD Primary Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

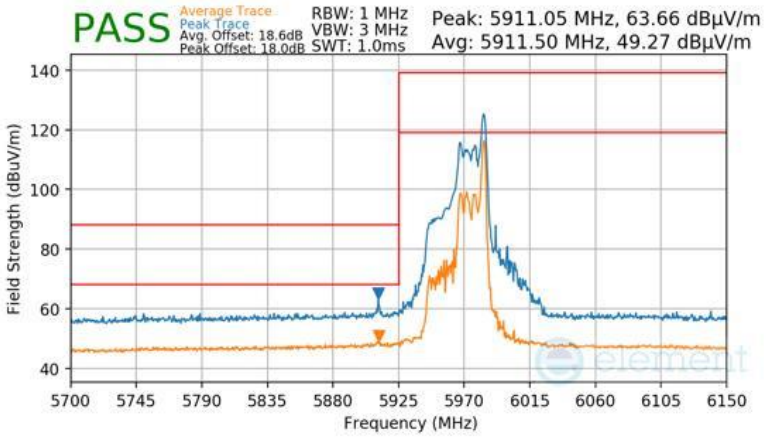
RU26

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	0
Distance of Measurements:	3 Meters
Operating Frequency:	5965MHz
Channel:	3



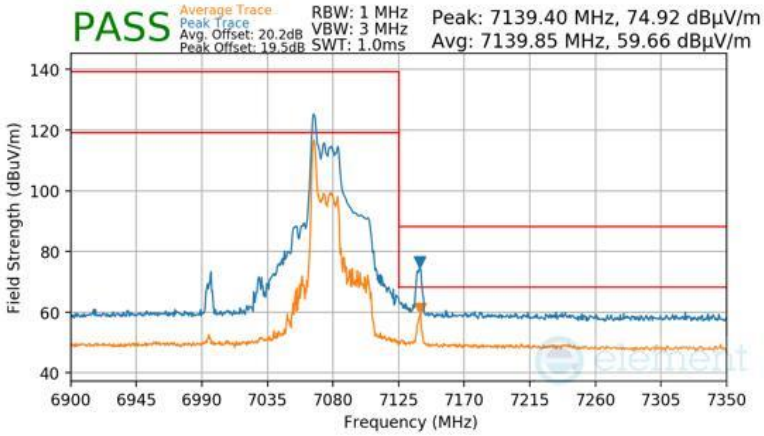
Plot 7-1135 CDD Primary Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	17
Distance of Measurements:	3 Meters
Operating Frequency:	5965MHz
Channel:	3



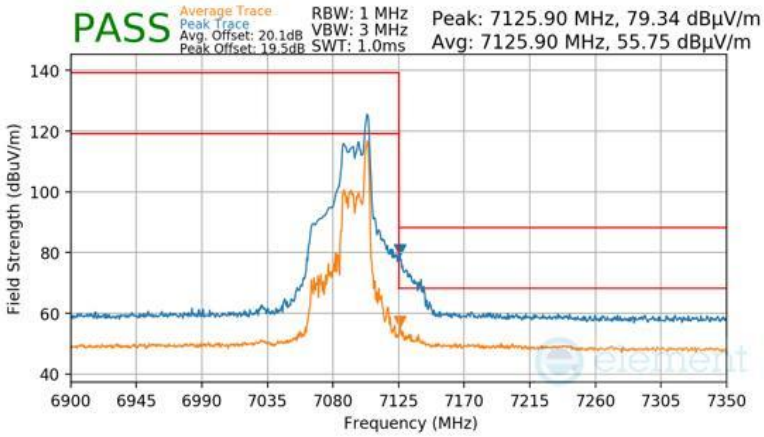
Plot 7-1136 CDD Primary Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	0
Distance of Measurements:	3 Meters
Operating Frequency:	7085MHz
Channel:	227



Plot 7-1137 CDD Primary Radiated Upper Band Edge (Peak & Average – UNII Band 8)

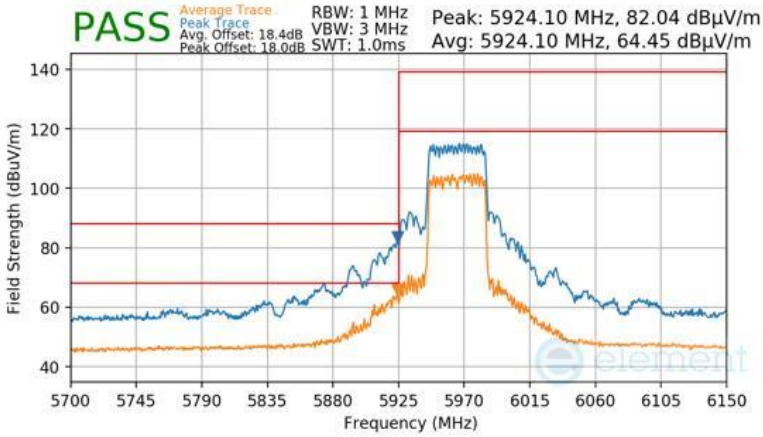
Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	17
Distance of Measurements:	3 Meters
Operating Frequency:	7085MHz
Channel:	227



Plot 7-1138 CDD Primary Radiated Upper Band Edge (Peak & Average – UNII Band 8)

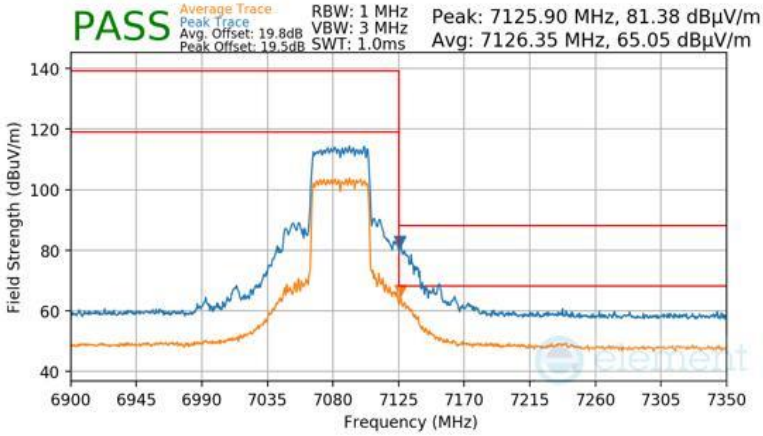
RU484

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	65
Distance of Measurements:	3 Meters
Operating Frequency:	5965MHz
Channel:	3



Plot 7-1139 CDD Primary Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	65
Distance of Measurements:	3 Meters
Operating Frequency:	7085MHz
Channel:	227



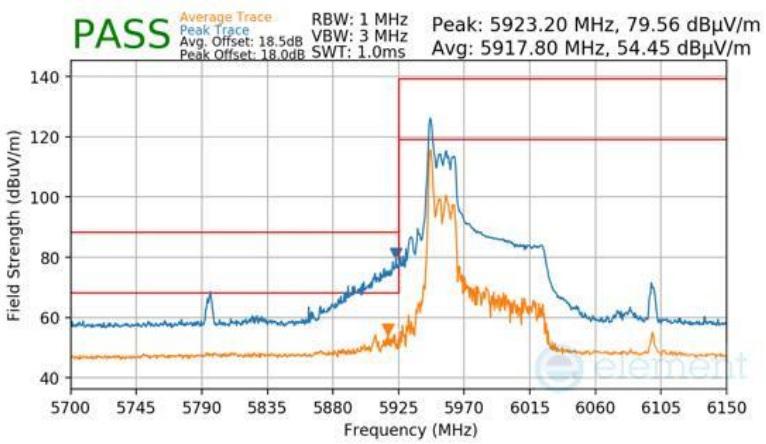
Plot 7-1140 CDD Primary Radiated Upper Band Edge (Peak & Average – UNII Band 8)

7.7.17 CDD Primary Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

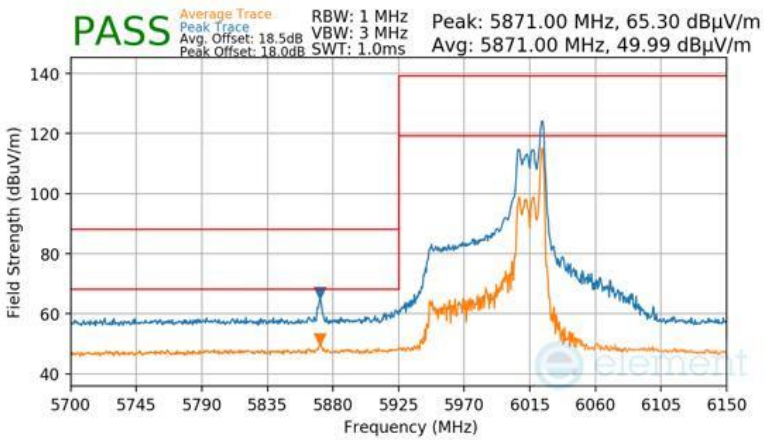
RU26

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	0
Distance of Measurements:	3 Meters
Operating Frequency:	5985MHz
Channel:	7



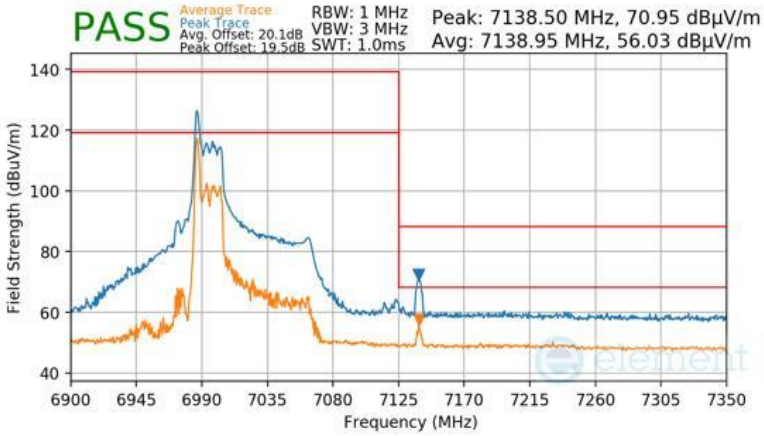
Plot 7-1141 CDD Primary Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	36
Distance of Measurements:	3 Meters
Operating Frequency:	5985MHz
Channel:	7



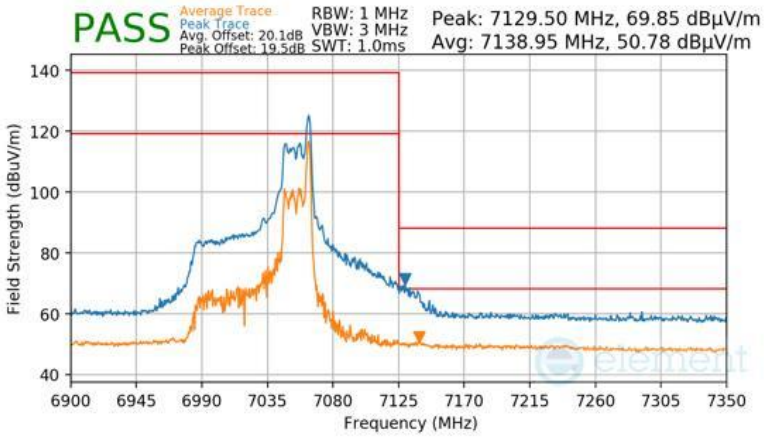
Plot 7-1142 CDD Primary Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	0
Distance of Measurements:	3 Meters
Operating Frequency:	7025MHz
Channel:	215



Plot 7-1143 CDD Primary Radiated Upper Band Edge (Peak & Average – UNII Band 8)

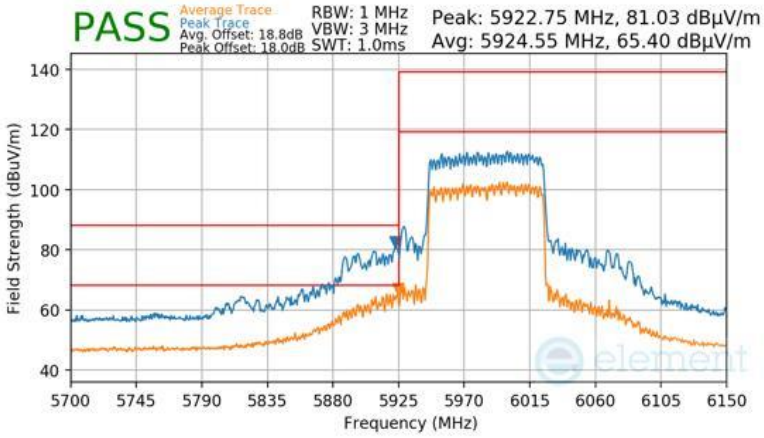
Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	36
Distance of Measurements:	3 Meters
Operating Frequency:	7025MHz
Channel:	215



Plot 7-1144 CDD Primary Radiated Upper Band Edge (Peak & Average – UNII Band 8)

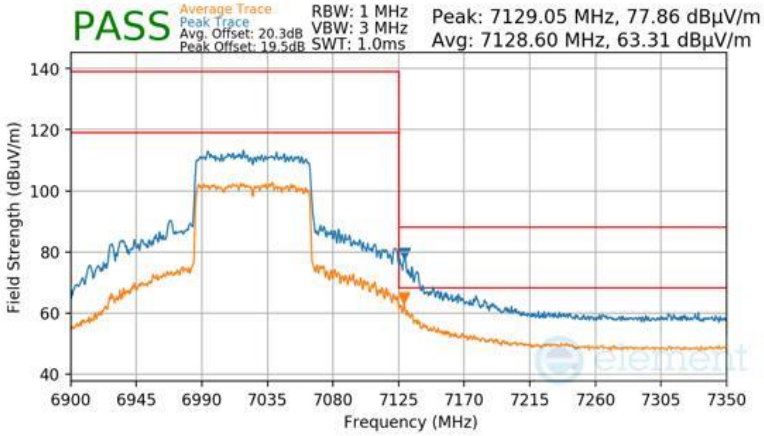
RU996

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	67
Distance of Measurements:	3 Meters
Operating Frequency:	5985MHz
Channel:	7



Plot 7-1145 CDD Primary Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	67
Distance of Measurements:	3 Meters
Operating Frequency:	7025MHz
Channel:	215



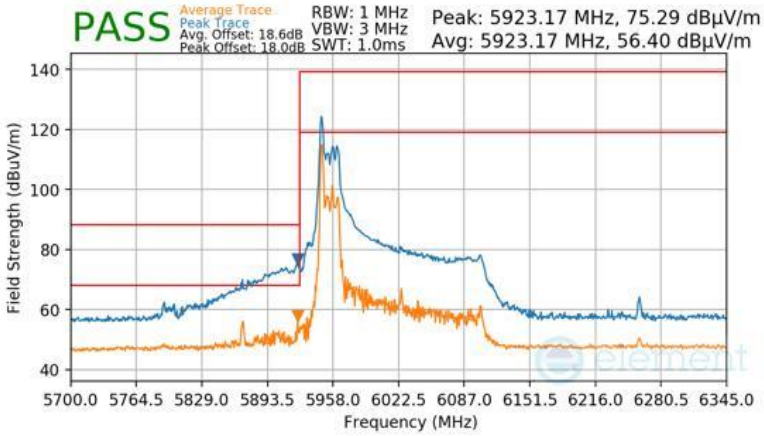
Plot 7-1146 CDD Primary Radiated Upper Band Edge (Peak & Average – UNII Band 8)

7.7.18 CDD Primary Radiated Band Edge Measurements (160MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

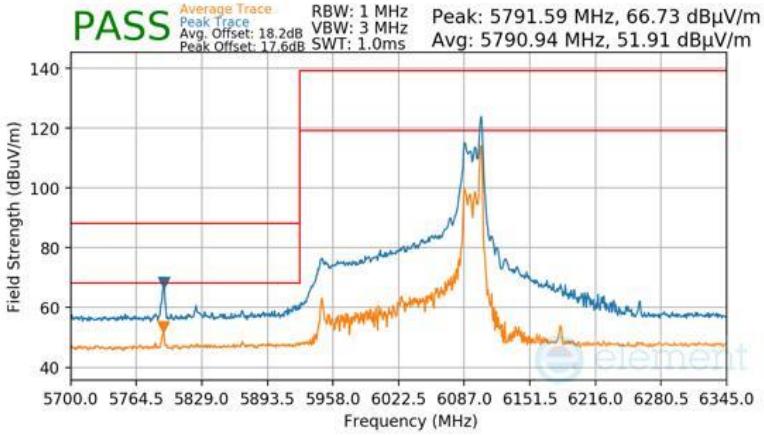
RU26

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	0
Distance of Measurements:	3 Meters
Operating Frequency:	6025MHz
Channel:	15



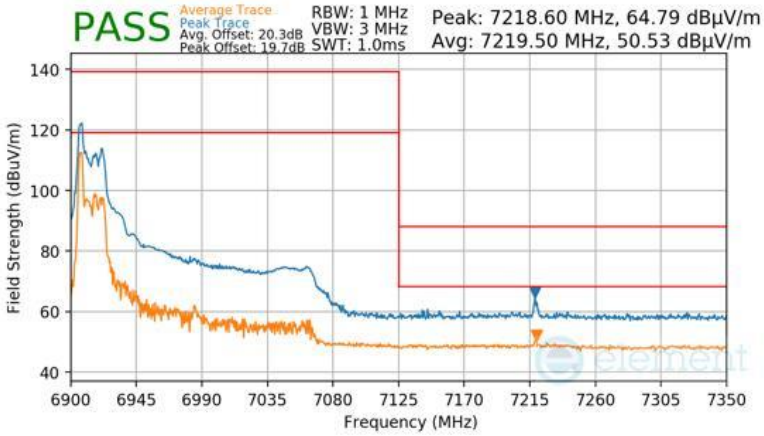
Plot 7-1147 CDD Primary Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	36
Distance of Measurements:	3 Meters
Operating Frequency:	6025MHz
Channel:	15



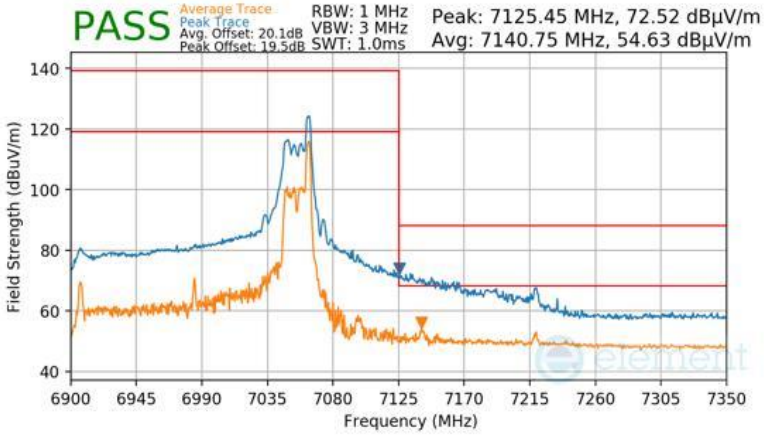
Plot 7-1148 CDD Primary Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	0
Distance of Measurements:	3 Meters
Operating Frequency:	6985MHz
Channel:	207



Plot 7-1149 CDD Primary Radiated Upper Band Edge (Peak & Average – UNII Band 8)

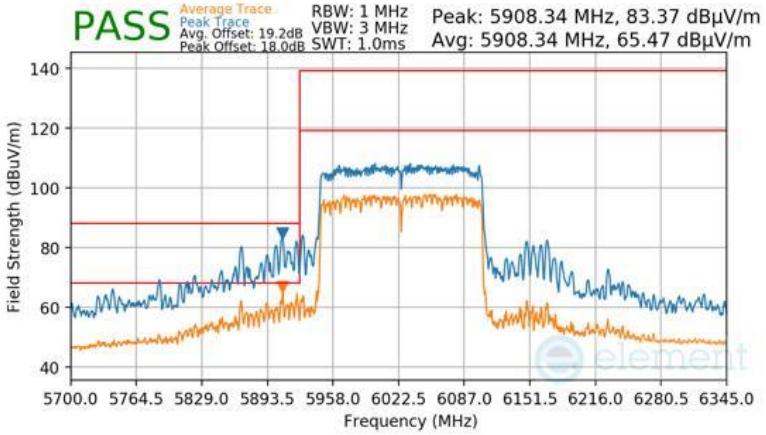
Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	36
Distance of Measurements:	3 Meters
Operating Frequency:	6985MHz
Channel:	207



Plot 7-1150 CDD Primary Radiated Upper Band Edge (Peak & Average – UNII Band 8)

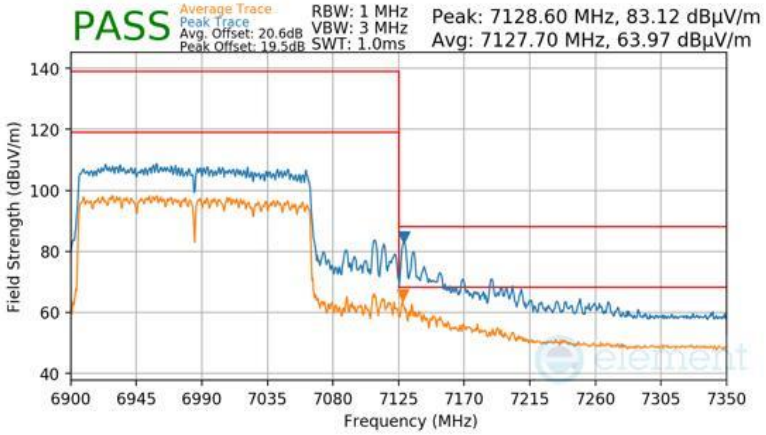
RU996x2

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	68
Distance of Measurements:	3 Meters
Operating Frequency:	6025MHz
Channel:	15



Plot 7-1151 CDD Primary Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	68
Distance of Measurements:	3 Meters
Operating Frequency:	6985MHz
Channel:	207



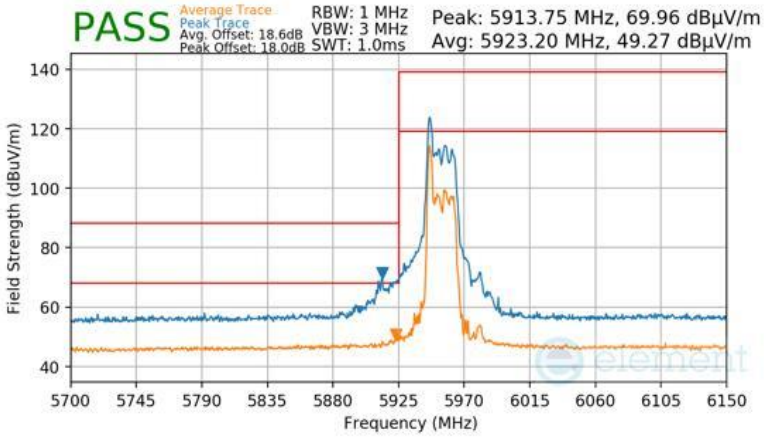
Plot 7-1152 CDD Primary Radiated Upper Band Edge (Peak & Average – UNII Band 8)

7.7.19 CDD Diversity Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

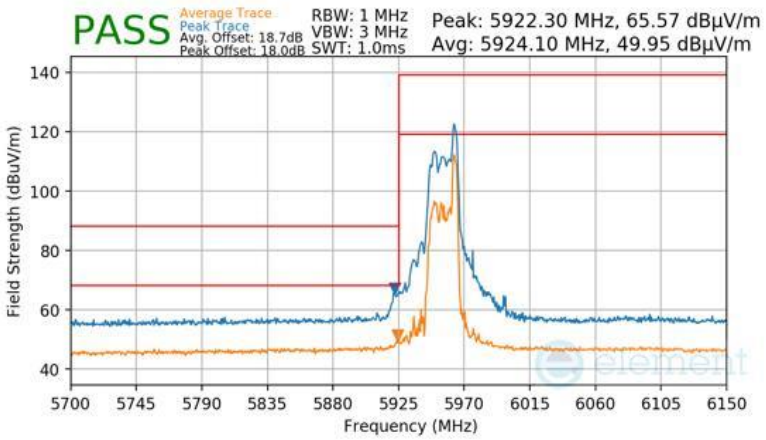
RU26

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	0
Distance of Measurements:	3 Meters
Operating Frequency:	5955MHz
Channel:	1



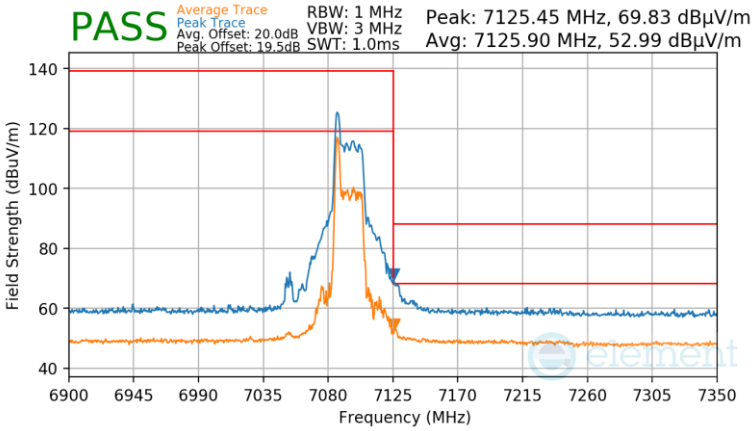
Plot 7-1153 CDD Diversity Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	8
Distance of Measurements:	3 Meters
Operating Frequency:	5955MHz
Channel:	1



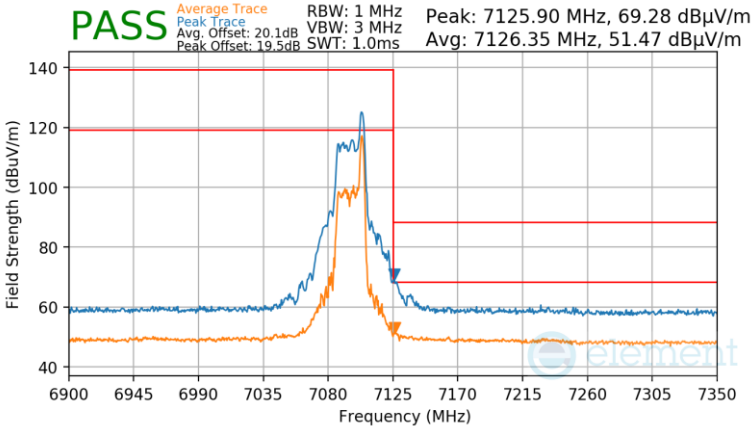
Plot 7-1154 CDD Diversity Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	0
Distance of Measurements:	3 Meters
Operating Frequency:	5955MHz
Channel:	229



Plot 7-1155 CDD Diversity Radiated Upper Band Edge (Peak & Average – UNII Band 8)

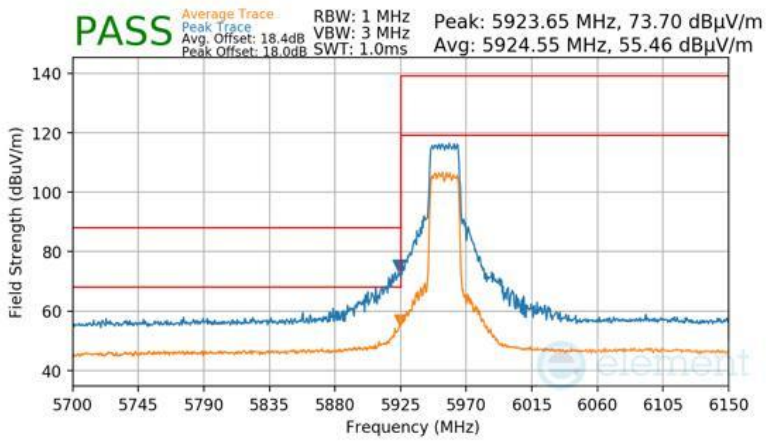
Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	8
Distance of Measurements:	3 Meters
Operating Frequency:	5955MHz
Channel:	1



Plot 7-1156 CDD Diversity Radiated Upper Band Edge (Peak & Average – UNII Band 8)

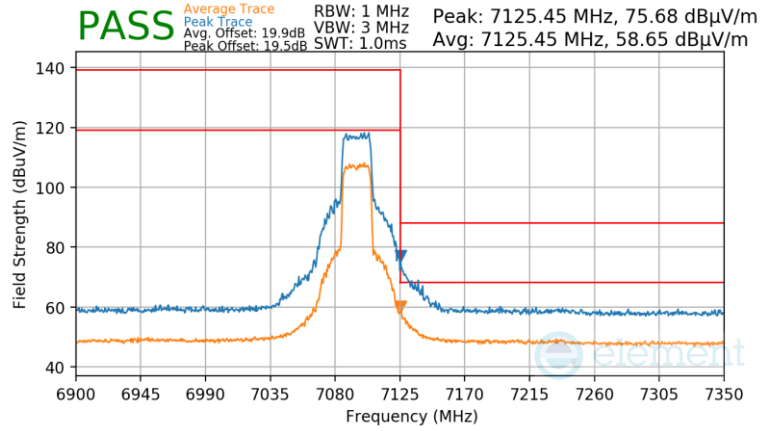
RU242

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	5955MHz
Channel:	1



Plot 7-1157 CDD Diversity Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	5955MHz
Channel:	229



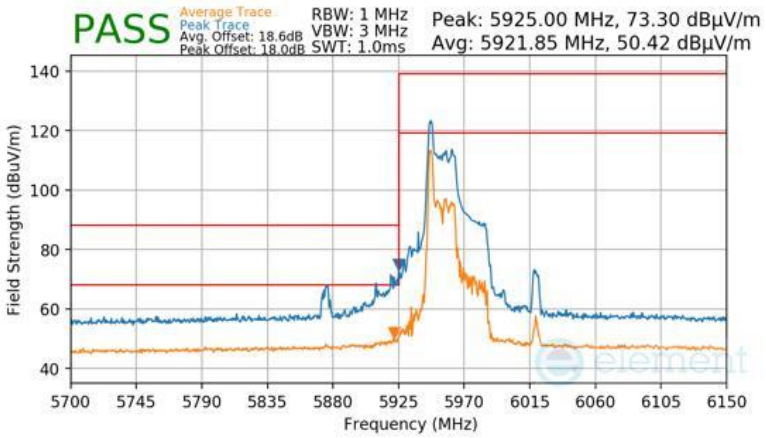
Plot 7-1158 CDD Diversity Radiated Upper Band Edge (Peak & Average – UNII Band 8)

7.7.20 CDD Diversity Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

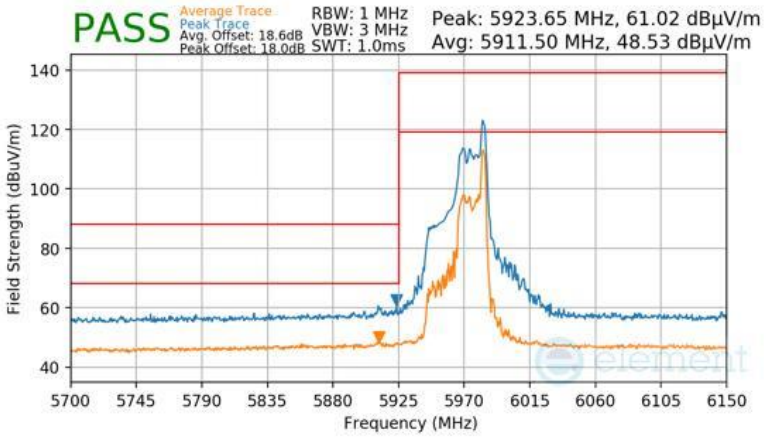
RU26

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	0
Distance of Measurements:	3 Meters
Operating Frequency:	5965MHz
Channel:	3



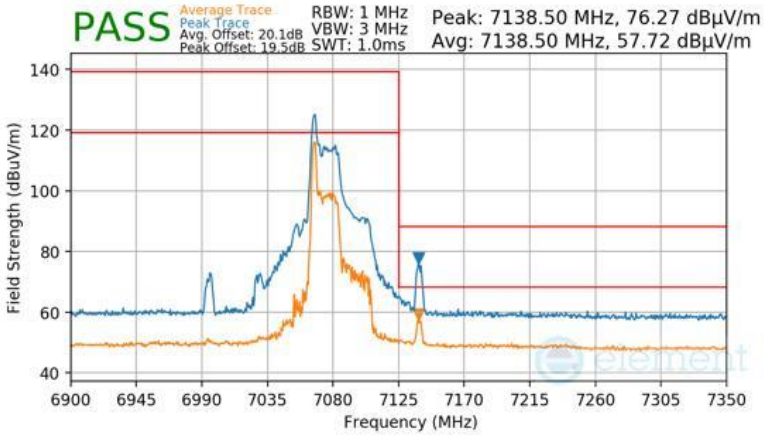
Plot 7-1159 CDD Diversity Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	17
Distance of Measurements:	3 Meters
Operating Frequency:	5965MHz
Channel:	3



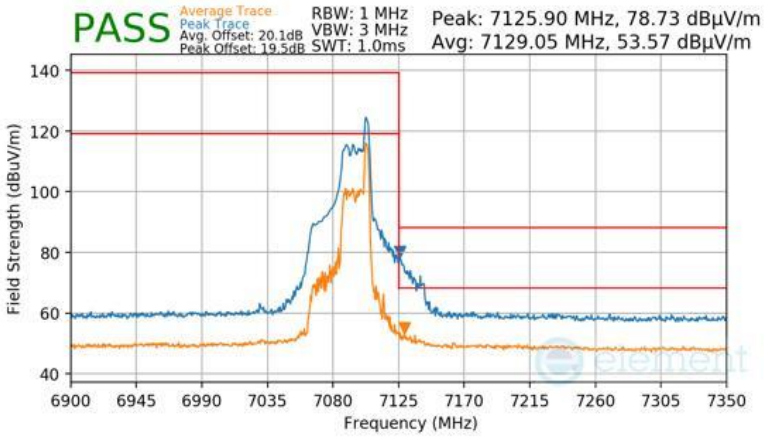
Plot 7-1160 CDD Diversity Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	0
Distance of Measurements:	3 Meters
Operating Frequency:	7085MHz
Channel:	227



Plot 7-1161 CDD Diversity Radiated Upper Band Edge (Peak & Average – UNII Band 8)

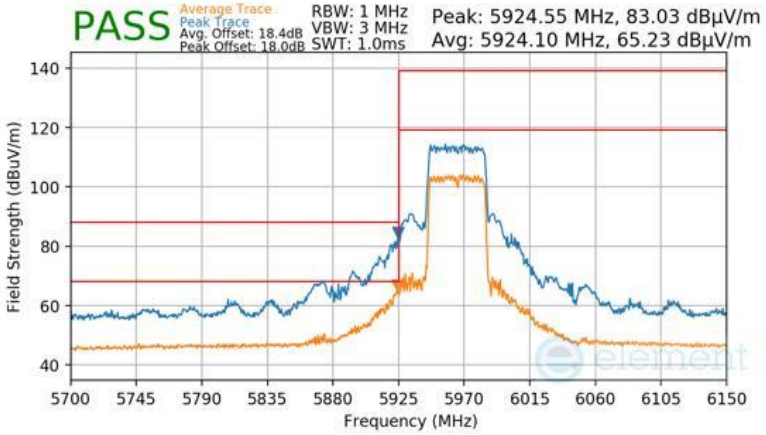
Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	17
Distance of Measurements:	3 Meters
Operating Frequency:	7085MHz
Channel:	227



Plot 7-1162 CDD Diversity Radiated Upper Band Edge (Peak & Average – UNII Band 8)

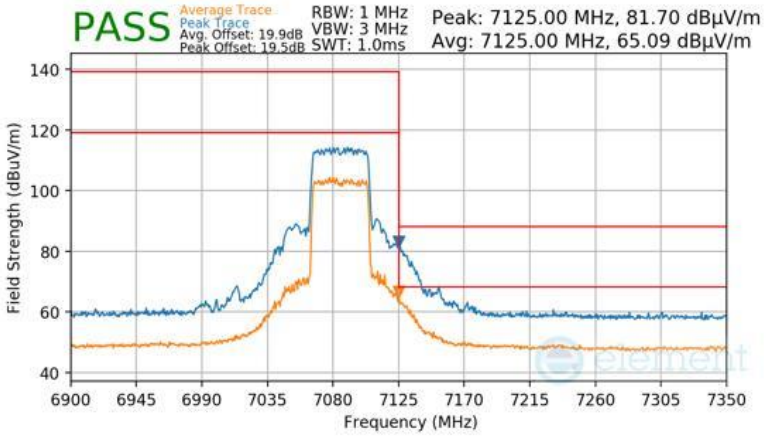
RU484

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	65
Distance of Measurements:	3 Meters
Operating Frequency:	5965MHz
Channel:	3



Plot 7-1163 CDD Diversity Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	65
Distance of Measurements:	3 Meters
Operating Frequency:	7085MHz
Channel:	227



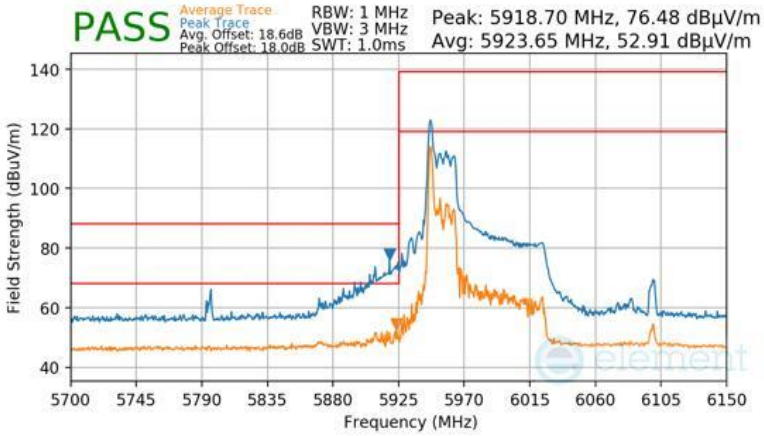
Plot 7-1164 CDD Diversity Radiated Upper Band Edge (Peak & Average – UNII Band 8)

7.7.21 CDD Diversity Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

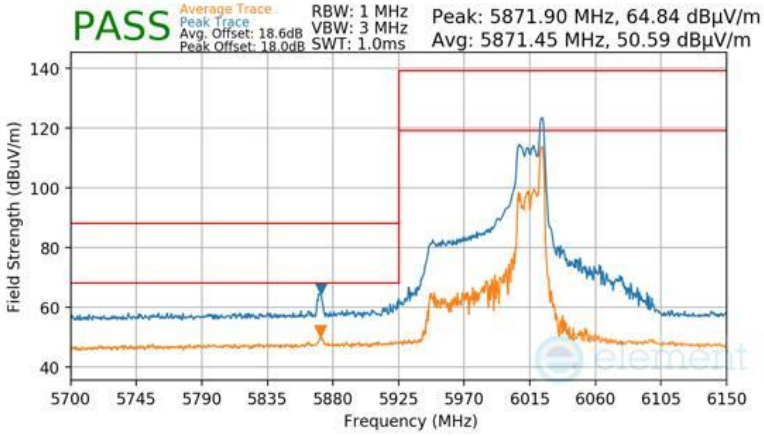
RU26

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	0
Distance of Measurements:	3 Meters
Operating Frequency:	5985MHz
Channel:	7



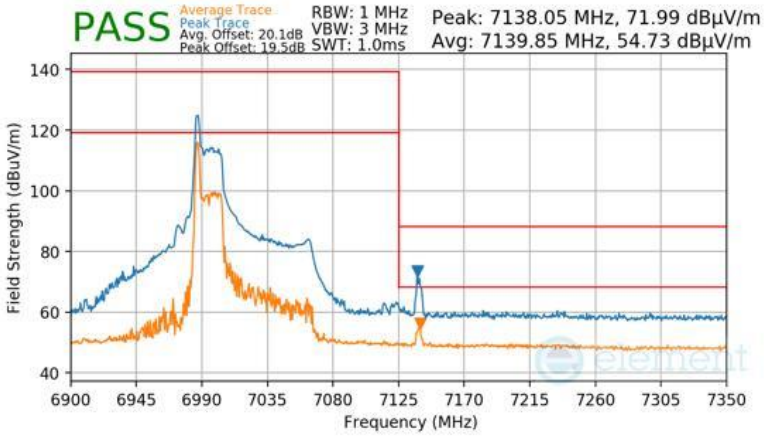
Plot 7-1165 CDD Diversity Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	36
Distance of Measurements:	3 Meters
Operating Frequency:	5985MHz
Channel:	7



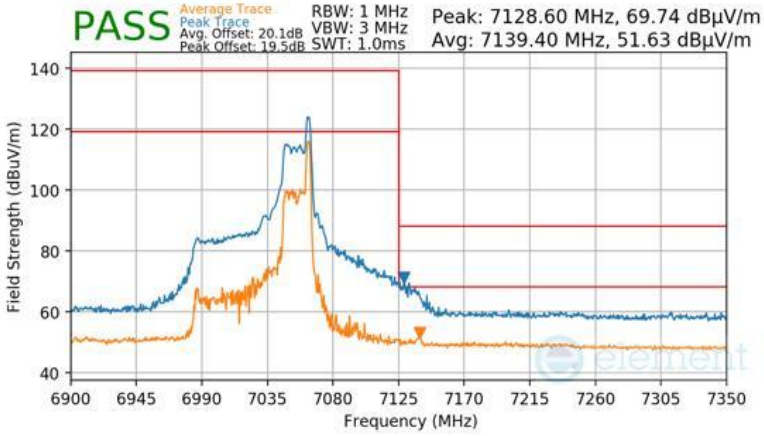
Plot 7-1166 CDD Diversity Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	0
Distance of Measurements:	3 Meters
Operating Frequency:	7025MHz
Channel:	215



Plot 7-1167 CDD Diversity Radiated Upper Band Edge (Peak & Average – UNII Band 8)

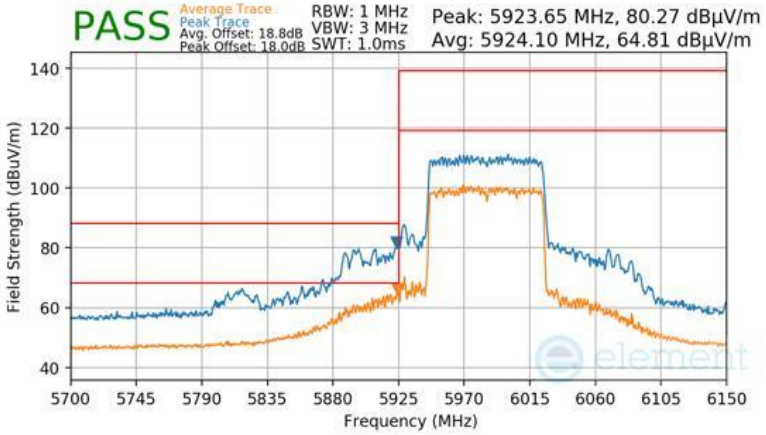
Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	36
Distance of Measurements:	3 Meters
Operating Frequency:	7025MHz
Channel:	215



Plot 7-1168 CDD Diversity Radiated Upper Band Edge (Peak & Average – UNII Band 8)

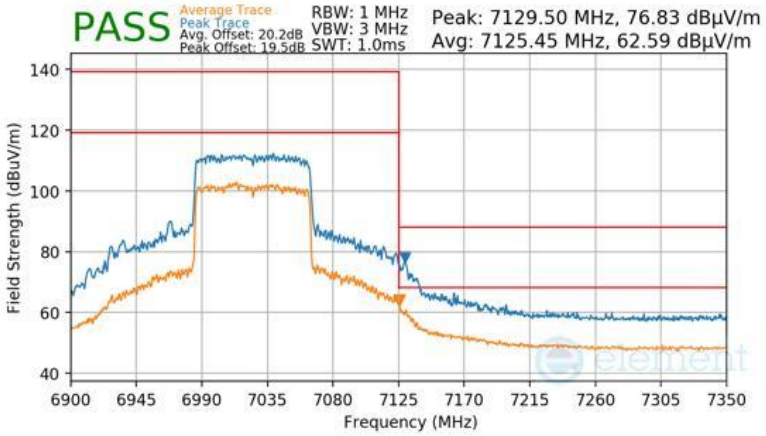
RU996

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	67
Distance of Measurements:	3 Meters
Operating Frequency:	5985MHz
Channel:	7



Plot 7-1169 CDD Diversity Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	67
Distance of Measurements:	3 Meters
Operating Frequency:	7025MHz
Channel:	215



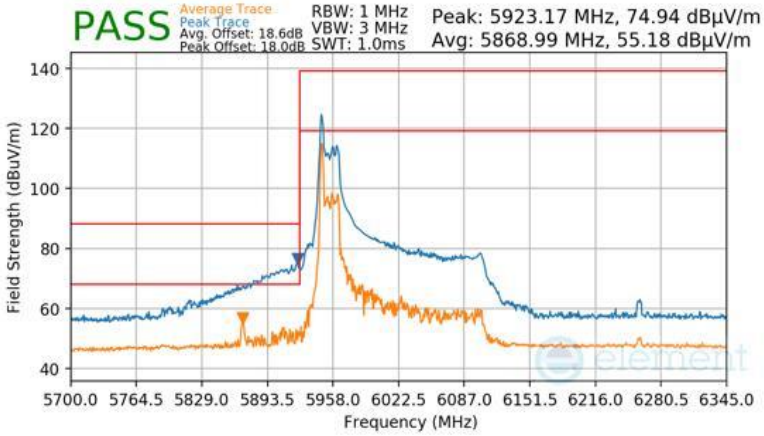
Plot 7-1170 CDD Diversity Radiated Upper Band Edge (Peak & Average – UNII Band 8)

7.7.22 CDD Diversity Radiated Band Edge Measurements (160MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

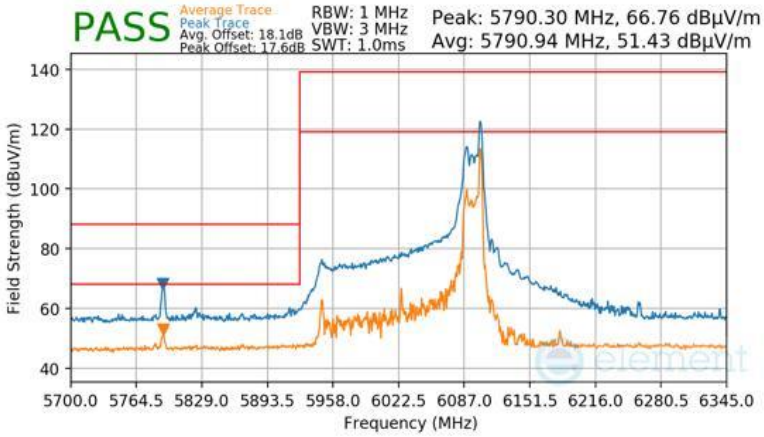
RU26

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	0
Distance of Measurements:	3 Meters
Operating Frequency:	6025MHz
Channel:	15



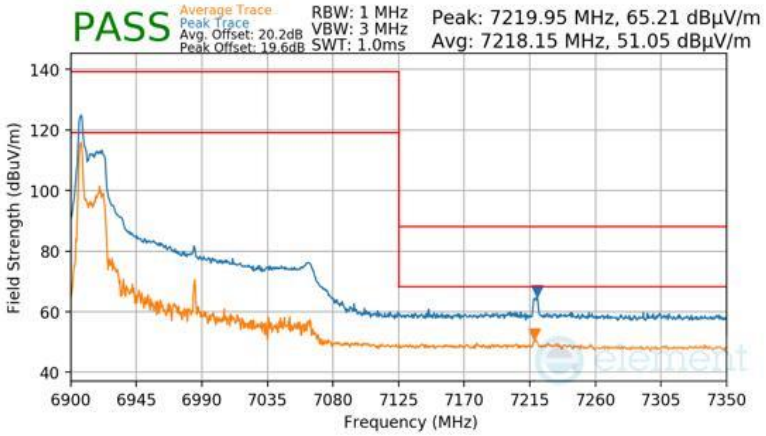
Plot 7-1171 CDD Diversity Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	36
Distance of Measurements:	3 Meters
Operating Frequency:	6025MHz
Channel:	15



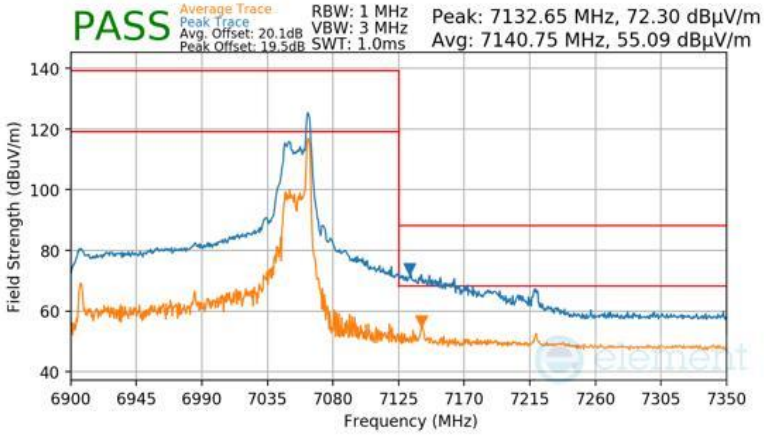
Plot 7-1172 CDD Diversity Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	0
Distance of Measurements:	3 Meters
Operating Frequency:	6985MHz
Channel:	207



Plot 7-1173 CDD Diversity Radiated Upper Band Edge (Peak & Average – UNII Band 8)

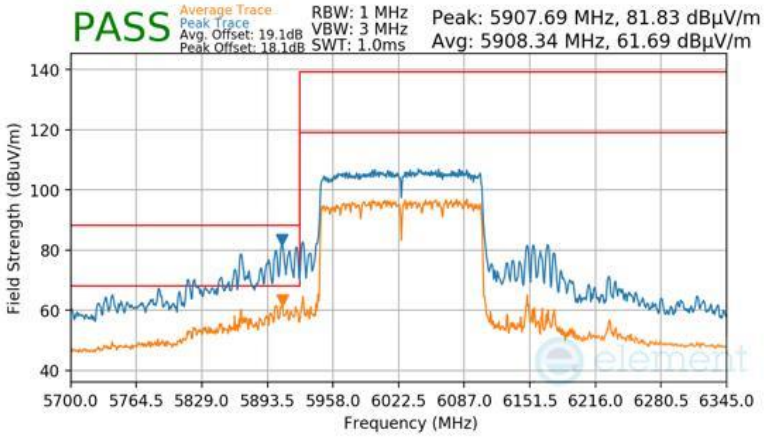
Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	36
Distance of Measurements:	3 Meters
Operating Frequency:	6985MHz
Channel:	207



Plot 7-1174 CDD Diversity Radiated Upper Band Edge (Peak & Average – UNII Band 8)

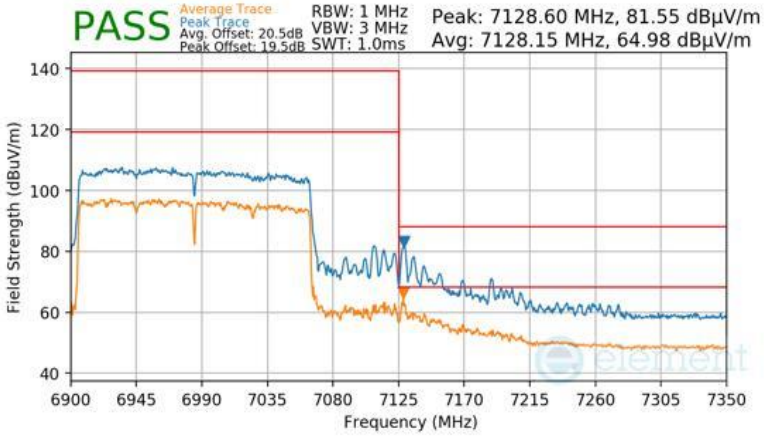
RU996x2

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	68
Distance of Measurements:	3 Meters
Operating Frequency:	6025MHz
Channel:	15



Plot 7-1175 CDD Diversity Radiated Lower Band Edge (Peak & Average – UNII Band 5)

Mode:	802.11ax OFDMA
Transfer Rate:	MCS11
RU Index:	68
Distance of Measurements:	3 Meters
Operating Frequency:	6985MHz
Channel:	207



Plot 7-1176 CDD Diversity Radiated Upper Band Edge (Peak & Average – UNII Band 8)

7.8 Radiated Spurious Emissions – Below 1GHz

§15.209; RSS-Gen [8.9]

Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR and Table 7 of RSS-Gen (8.10) must not exceed the limits shown in Table 7-249 per Section 15.209 and RSS-Gen (8.9).

Frequency	Field Strength [µV/m]	Measured Distance [Meters]
0.009 – 0.490 MHz	2400/F (kHz)	300
0.490 – 1.705 MHz	24000/F (kHz)	30
1.705 – 30.00 MHz	30	30
30.00 – 88.00 MHz	100	3
88.00 – 216.0 MHz	150	3
216.0 – 960.0 MHz	200	3
Above 960.0 MHz	500	3

Table 7-249. Radiated Limits

Test Procedures Used

ANSI C63.10-2020

Test Settings

Quasi-Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 120kHz (for emissions from 30MHz – 1GHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 120kHz (for emissions from 30MHz – 1GHz)
3. VBW = 300kHz
4. Detector = quasi-peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagrams below.

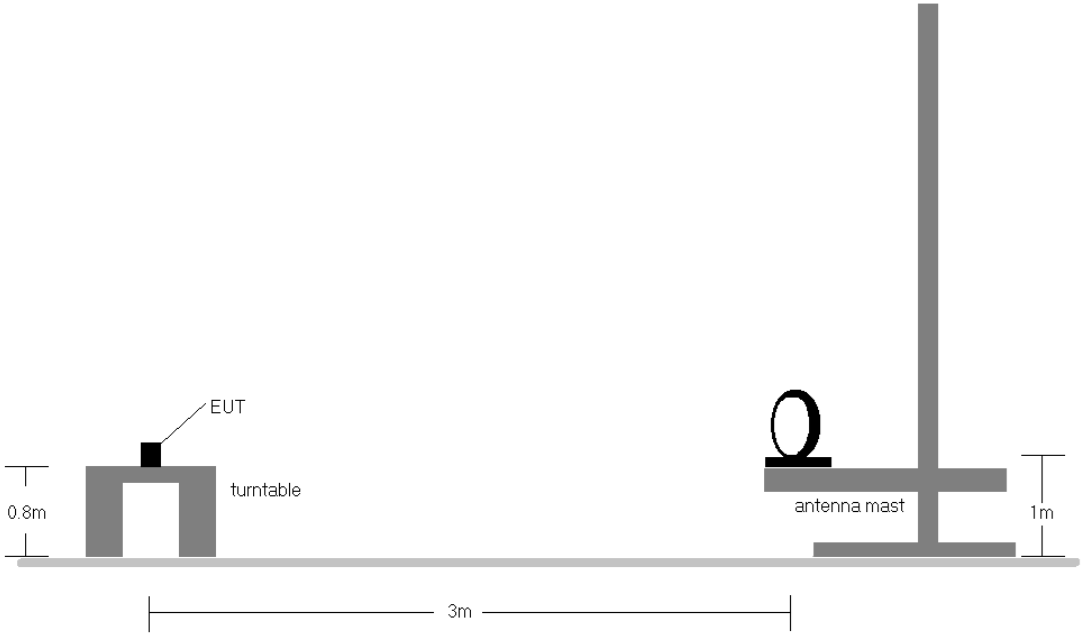


Figure 7-6. Radiated Test Setup < 30MHz

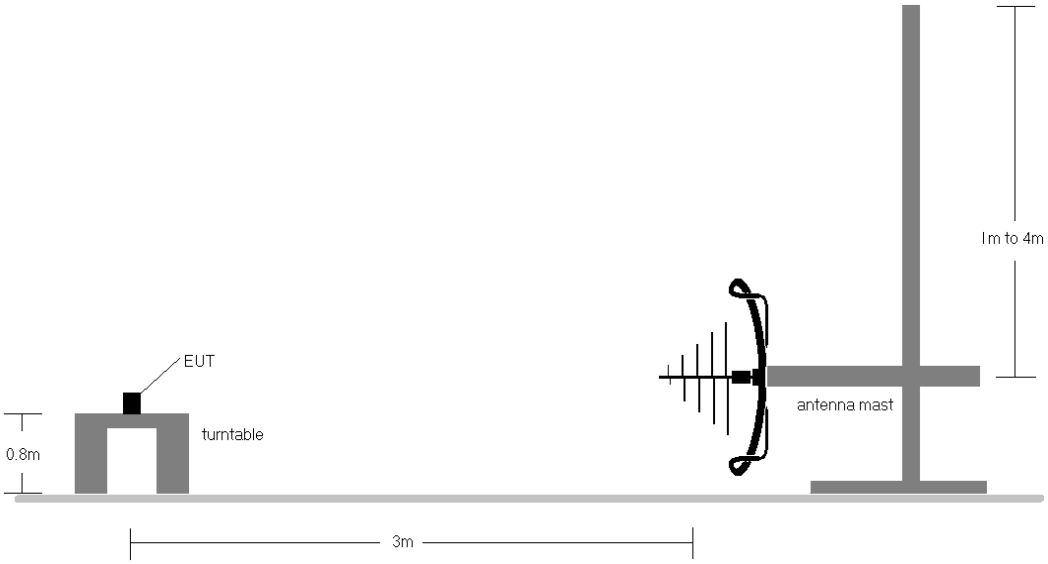


Figure 7-7. Radiated Test Setup < 1GHz

Test Notes

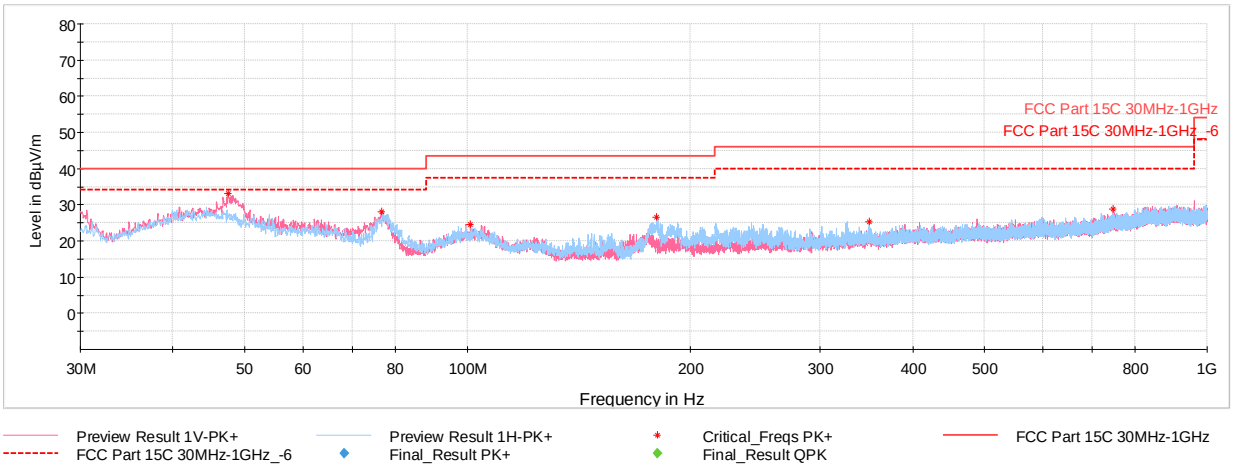
1. All emissions lying in restricted bands specified in §15.205 and RSS-Gen (8.10) are below the limit shown in Table 7-249.
2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes. For below 30MHz the loop antenna was positioned in 3 orthogonal planes (X front, Y side, Z top) to determine the orientation resulting in the worst case emissions.
3. This unit was tested with its standard battery.
4. The spectrum is investigated using a peak detector and final measurements are recorded using CISPR quasi peak detector on emissions that were within 6dB of the limit.
5. Emissions were measured at a 3 meter test distance.
6. Emissions are investigated while operating on the center channel of the mode, band, and modulation that produced the worst case results during the transmitter spurious emissions testing.
7. No spurious emissions were detected within 20dB of the limit below 30MHz.
8. The results recorded using the broadband antenna is known to correlate with the results obtained by using a tuned dipole with an acceptable degree of accuracy. The VSWR for the measurement antenna was found to be less than 2:1.
9. Both configurations below were investigated, and the worst case has been reported.
    a. EUT powered by AC/DC adaptor via USB-C cable with wire charger
    b. EUT powered by host PC via USB-C cable with wire charger
10. All antenna configurations were investigated and only the worst case is reported.
11. The unit was tested with all possible modes and only the highest emission is reported.

Sample Calculations

Determining Spurious Emissions Levels

- Field Strength Level $_{[dB\mu V/m]}$ = Analyzer Level $_{[dBm]}$ + 107 + AFCL $_{[dB/m]}$
- AFCL $_{[dB/m]}$ = Antenna Factor $_{[dB/m]}$ + Cable Loss $_{[dB]}$ - Preamp Gain $_{[dB]}$
- Margin $_{[dB]}$ = Field Strength Level $_{[dB\mu V/m]}$ – Limit $_{[dB\mu V/m]}$

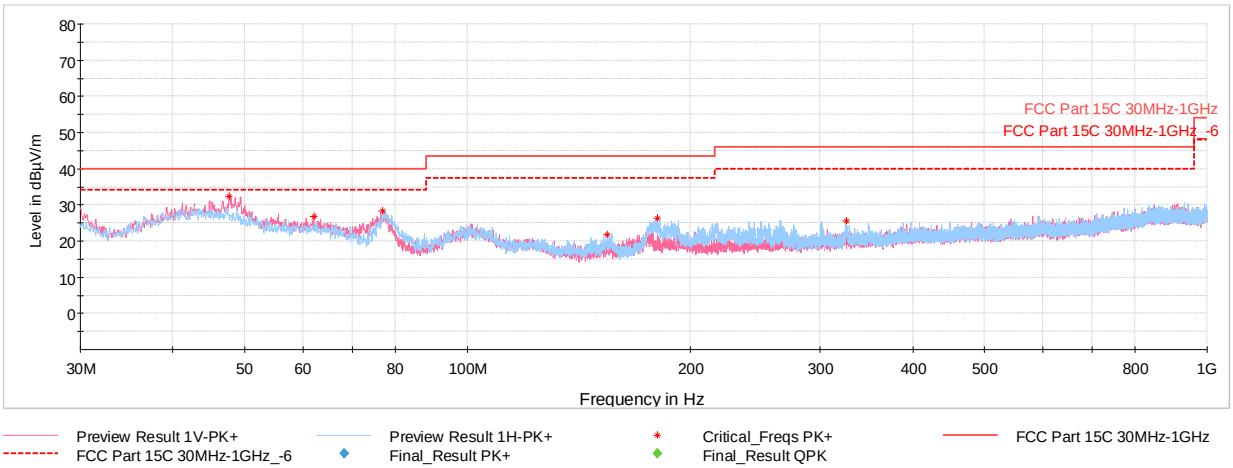
7.8.1 SDM Primary Radiated Spurious Emissions Measurements (Below 1GHz)



Plot 7-1177. Radiated Spurious Emissions below 1GHz SDM (802.11ax – Ch.1 – RU26) with AC/DC adaptor via USB-C cable with wire charger

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
47.56	Max Peak	V	100	271	-59.53	-14.36	33.11	40.00	-6.89
76.71	Max Peak	V	300	43	-57.55	-21.31	28.14	40.00	-11.86
101.00	Max Peak	V	100	327	-65.88	-16.48	24.64	43.52	-18.88
180.35	Max Peak	H	200	2	-62.82	-17.75	26.43	43.52	-17.09
348.99	Max Peak	H	100	1	-70.05	-11.58	25.37	46.02	-20.65
745.33	Max Peak	V	100	127	-74.30	-3.99	28.71	46.02	-17.31

Table 7-250. Radiated Spurious Emissions below 1GHz SDM (802.11ax – Ch.1 – RU26) with AC/DC adaptor via USB-C cable with wire charger

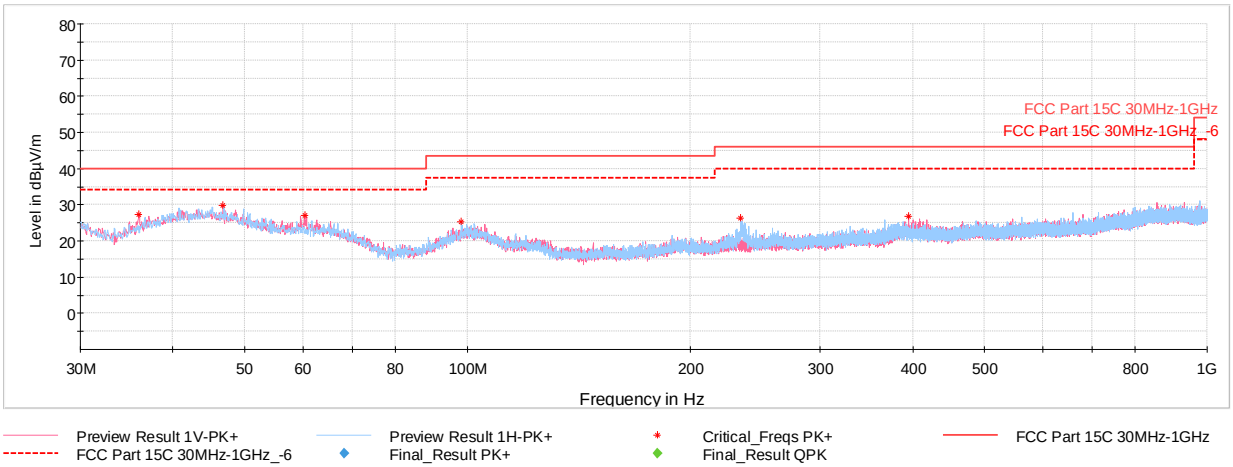


Plot 7-1178. Radiated Spurious Emissions below 1GHz SDM (802.11ax – Ch.1 – RU242) with AC/DC adaptor via USB-C cable with wire charger

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
47.70	Max Peak	V	100	327	-60.35	-14.36	32.29	40.00	-7.71
62.01	Max Peak	V	100	254	-63.76	-16.38	26.86	40.00	-13.14
76.85	Max Peak	H	300	89	-57.38	-21.34	28.28	40.00	-11.72
154.55	Max Peak	H	200	170	-65.77	-19.36	21.87	43.52	-21.65
180.64	Max Peak	H	200	350	-63.05	-17.73	26.22	43.52	-17.30
325.61	Max Peak	H	100	275	-68.85	-12.48	25.67	46.02	-20.35

Table 7-251. Radiated Spurious Emissions below 1GHz SDM (802.11ax – Ch.1 – RU242) with AC/DC adaptor via USB-C cable with wire charger

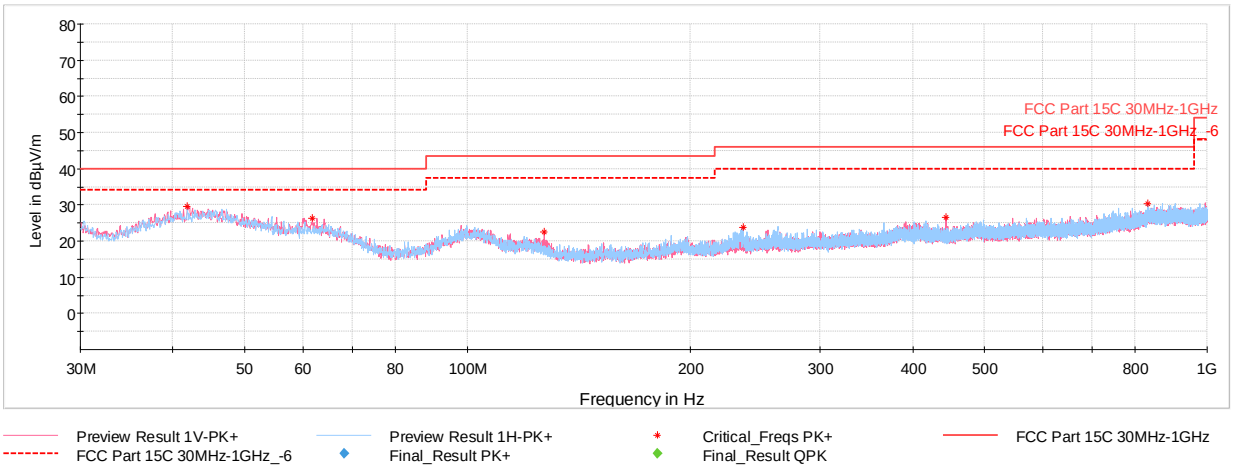
7.8.2 SDM Diversity Radiated Spurious Emissions Measurements (Below 1GHz)



Plot 7-1179. Radiated Spurious Emissions below 1GHz SDM (802.11ax – Ch.1 – RU26) with AC/DC adaptor via USB-C cable with wire charger

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
36.01	Max Peak	V	100	320	-62.53	-17.22	27.25	40.00	-12.75
46.78	Max Peak	V	300	17	-62.70	-14.39	29.91	40.00	-10.09
60.31	Max Peak	V	100	248	-64.04	-15.87	27.09	40.00	-12.91
98.24	Max Peak	H	200	267	-64.93	-16.71	25.36	43.52	-18.16
234.28	Max Peak	H	100	191	-65.69	-14.89	26.42	46.02	-19.60
394.87	Max Peak	V	100	196	-69.74	-10.44	26.82	46.02	-19.20

Table 7-252. Radiated Spurious Emissions below 1GHz SDM (802.11ax – Ch.1 – RU26) with AC/DC adaptor via USB-C cable with wire charger



Plot 7-1180. Radiated Spurious Emissions below 1GHz SDM (802.11ax – Ch.1 – RU242) with AC/DC adaptor via USB-C cable with wire charger

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
41.83	Max Peak	V	300	186	-62.27	-15.19	29.54	40.00	-10.46
61.77	Max Peak	V	200	248	-64.43	-16.31	26.26	40.00	-13.74
127.05	Max Peak	V	100	290	-65.18	-19.37	22.45	43.52	-21.07
235.83	Max Peak	H	100	196	-68.45	-14.87	23.68	46.02	-22.34
443.22	Max Peak	V	100	190	-70.52	-9.96	26.52	46.02	-19.50
830.64	Max Peak	H	100	341	-74.38	-2.40	30.22	46.02	-15.80

Table 7-253. Radiated Spurious Emissions below 1GHz SDM (802.11ax – Ch.1 – RU242) with AC/DC adaptor via USB-C cable with wire charger

7.9 AC Line-Conducted Emissions Measurement

§15.407; RSS-Gen [8.8]

Test Overview and Limit

All AC line conducted spurious emissions are measured with a receiver connected to a grounded LISN while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for AC Line conducted spurious emissions. Only the conducted emissions of the configuration that produced the worst case emissions are reported in this section.

All conducted emissions must not exceed the limits shown in the table below, per Section 15.207 and RSS-Gen (8.8).

Frequency of emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

Table 7-254. Conducted Limits

*Decreases with the logarithm of the frequency.

Test Procedures Used

ANSI C63.10-2020, Section 6.2

Test Settings

Quasi-Peak Measurements

1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

Average Measurements

1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = RMS
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

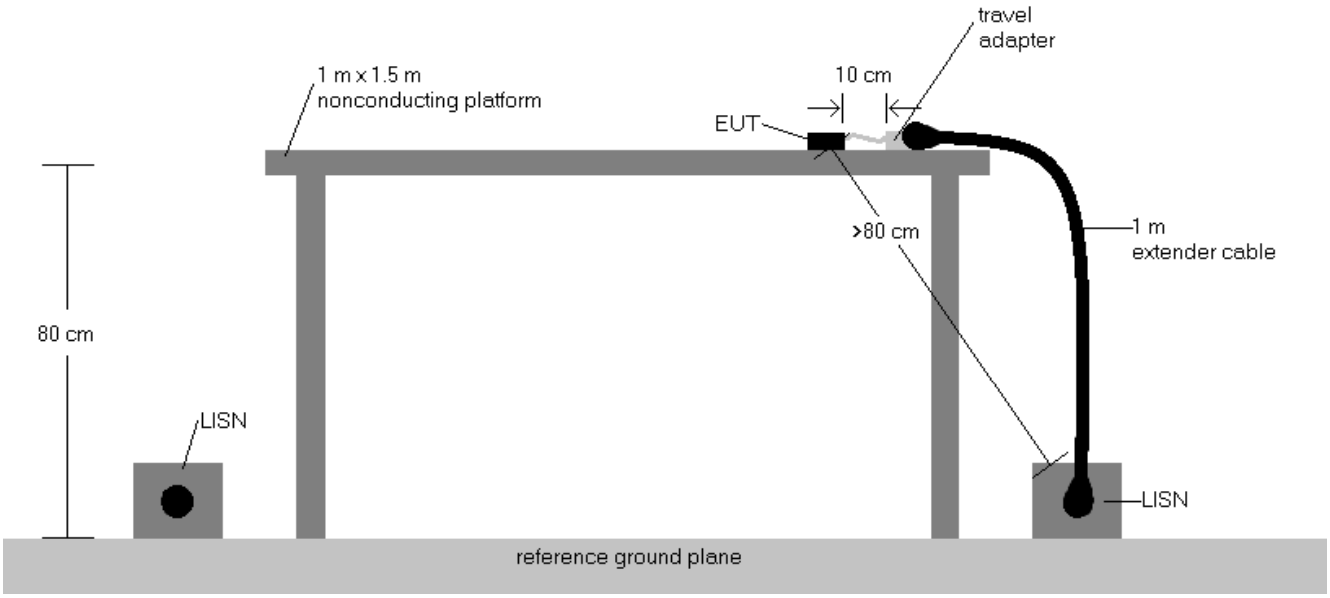
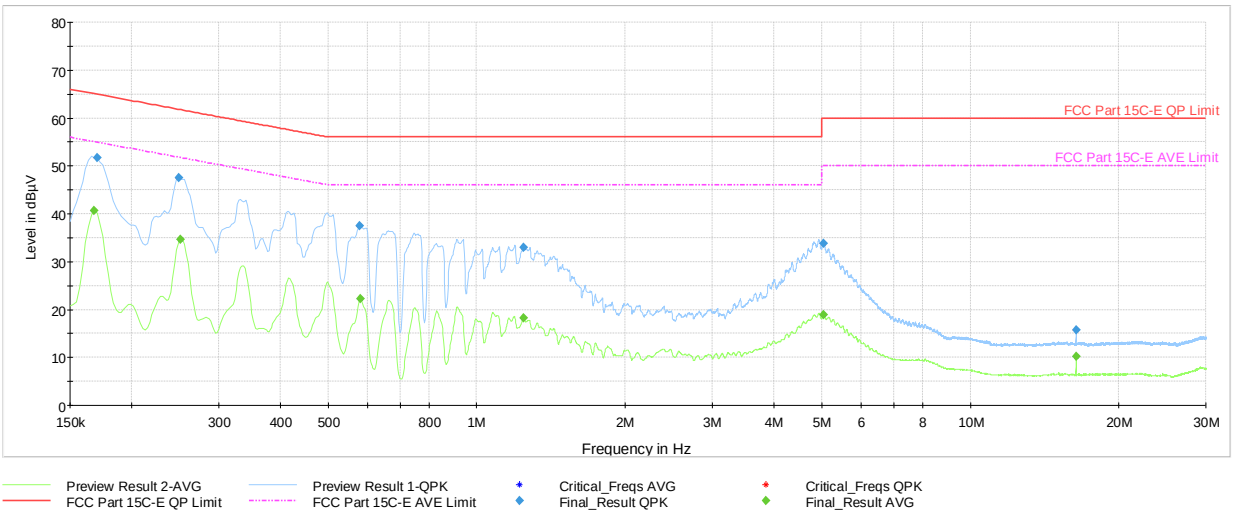


Figure 7-8. Test Instrument & Measurement Setup

Test Notes

1. All modes of operation were investigated and the worst-case emissions are reported. The emissions found were not affected by the choice of channel used during testing.
2. Both configurations below were investigated, and the worst case has been reported.
    a. EUT powered by AC/DC adaptor via USB-C cable with wire charger
    b. EUT powered by host PC via USB-C cable with wire charger
3. The limit for an intentional radiator from 150kHz to 30MHz are specified in 15.207 and RSS-Gen (8.8).
4. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
5. QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Correction Factor (dB)
6. Margin (dB) = QP/AV Level (dBµV) - QP/AV Limit (dBµV)
7. Traces shown in plots are made using quasi-peak and average detectors.
8. Deviations to the Specifications: None.
9. The unit was tested with all possible modes and only the highest emission is reported.

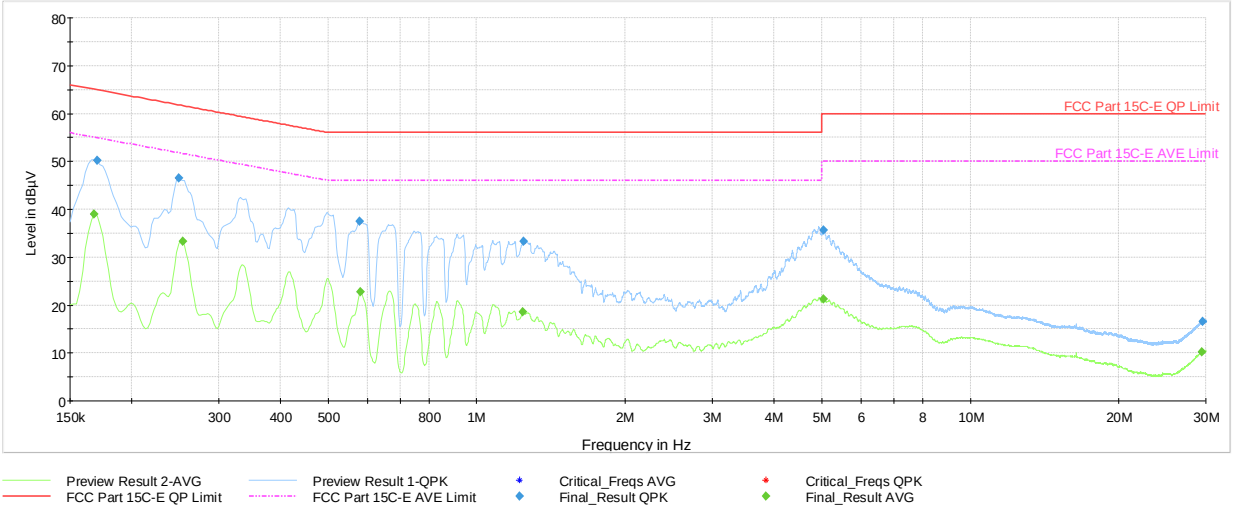
7.9.1 SDM Primary Line-Conducted Emissions Measurement



Plot 7-1181. AC Line Conducted Plot with 11ax SDM Primary UNII Band 5 – RU26 – Ch.1 (L1) with AC/DC adaptor via USB-C cable with wire charger

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.17	FINAL	---	40.68	55.06	-14.38	L1	GND
0.17	FINAL	51.80	---	64.95	-13.15	L1	GND
0.25	FINAL	47.56	---	61.79	-14.23	L1	GND
0.25	FINAL	---	34.70	51.72	-17.02	L1	GND
0.58	FINAL	37.54	---	56.00	-18.46	L1	GND
0.58	FINAL	---	22.23	46.00	-23.77	L1	GND
1.24	FINAL	33.03	---	56.00	-22.97	L1	GND
1.24	FINAL	---	18.23	46.00	-27.77	L1	GND
5.04	FINAL	33.89	---	60.00	-26.11	L1	GND
5.04	FINAL	---	18.89	50.00	-31.11	L1	GND
16.37	FINAL	---	10.19	50.00	-39.81	L1	GND
16.37	FINAL	15.68	---	60.00	-44.32	L1	GND

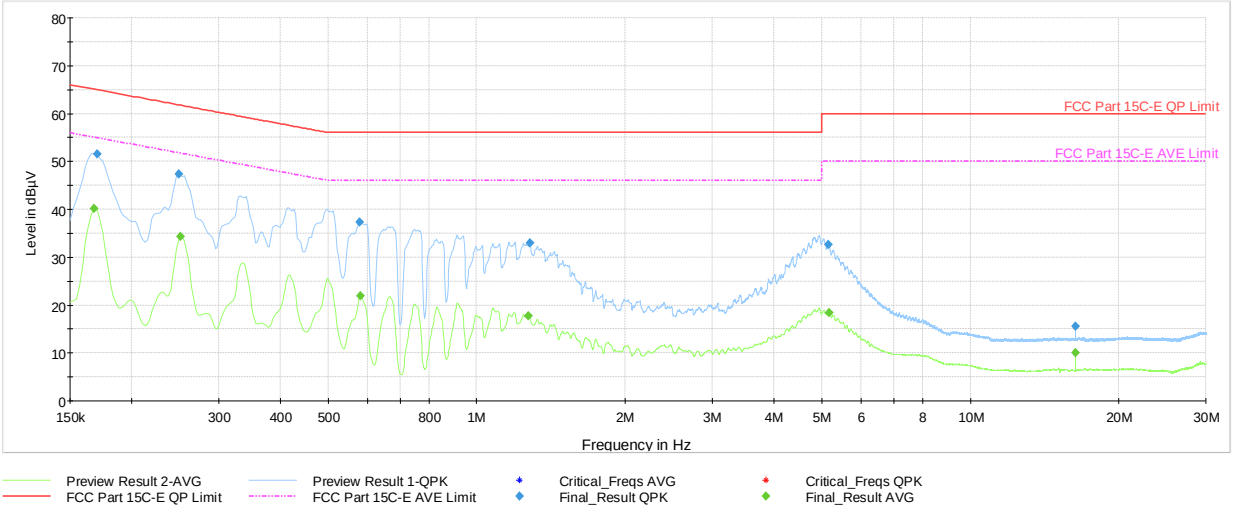
Table 7-255. AC Line Conducted Data with 11ax SDM Primary UNII Band 5 – RU26 – Ch.1 (L1) with AC/DC adaptor via USB-C cable with wire charger



Plot 7-1182. AC Line Conducted Plot with 11ax SDM Primary UNII Band 5 – RU26 – Ch.1 (N) with AC/DC adaptor via USB-C cable with wire charger

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.17	FINAL	---	38.95	55.06	-16.11	N	GND
0.17	FINAL	50.23	---	64.95	-14.72	N	GND
0.25	FINAL	46.46	---	61.79	-15.33	N	GND
0.25	FINAL	---	33.39	51.64	-18.25	N	GND
0.58	FINAL	37.53	---	56.00	-18.47	N	GND
0.58	FINAL	---	22.69	46.00	-23.31	N	GND
1.24	FINAL	---	18.61	46.00	-27.39	N	GND
1.24	FINAL	33.33	---	56.00	-22.67	N	GND
5.04	FINAL	35.60	---	60.00	-24.40	N	GND
5.05	FINAL	---	21.31	50.00	-28.69	N	GND
29.48	FINAL	---	10.23	50.00	-39.77	N	GND
29.53	FINAL	16.64	---	60.00	-43.36	N	GND

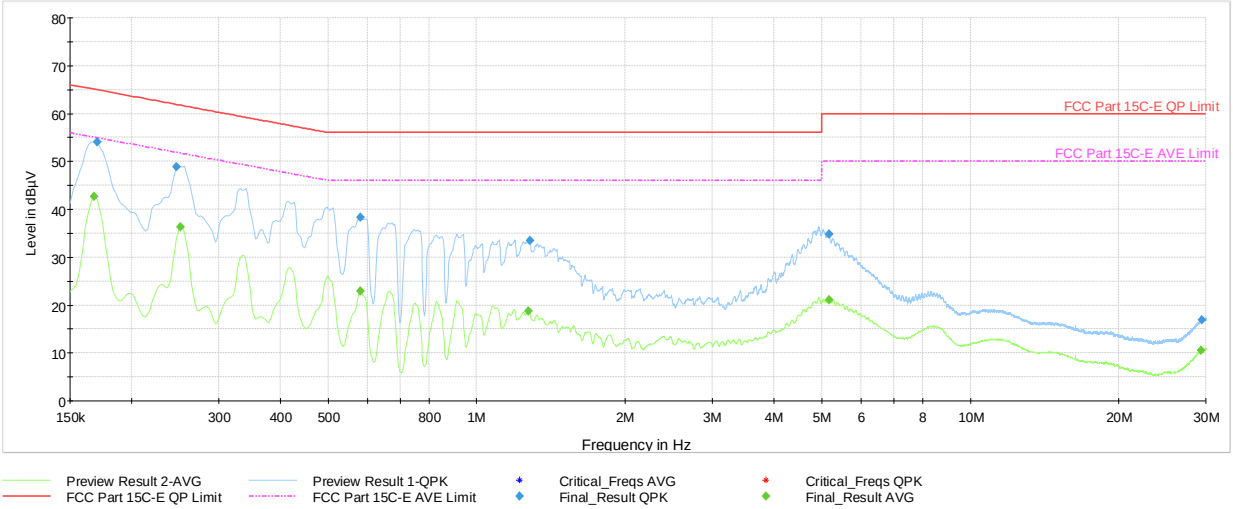
Table 7-256. AC Line Conducted Data with 11ax SDM Primary UNII Band 5 – RU26 – Ch.1 (N) with AC/DC adaptor via USB-C cable with wire charger



Plot 7-1183. AC Line Conducted Plot with 11ax SDM Primary UNII Band 5 – RU242 – Ch.1 (L1) with AC/DC adaptor via USB-C cable with wire charger

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.17	FINAL	---	40.18	55.06	-14.88	L1	GND
0.17	FINAL	51.55	---	64.95	-13.40	L1	GND
0.25	FINAL	47.29	---	61.79	-14.50	L1	GND
0.25	FINAL	---	34.27	51.72	-17.45	L1	GND
0.58	FINAL	37.36	---	56.00	-18.64	L1	GND
0.58	FINAL	---	21.98	46.00	-24.02	L1	GND
1.27	FINAL	---	17.73	46.00	-28.27	L1	GND
1.28	FINAL	32.89	---	56.00	-23.11	L1	GND
5.16	FINAL	32.70	---	60.00	-27.30	L1	GND
5.17	FINAL	---	18.45	50.00	-31.55	L1	GND
16.34	FINAL	---	10.04	50.00	-39.96	L1	GND
16.34	FINAL	15.60	---	60.00	-44.40	L1	GND

Table 7-257. AC Line Conducted Data with 11ax SDM Primary UNII Band 5 – RU242 – Ch.1 (L1) with AC/DC adaptor via USB-C cable with wire charger

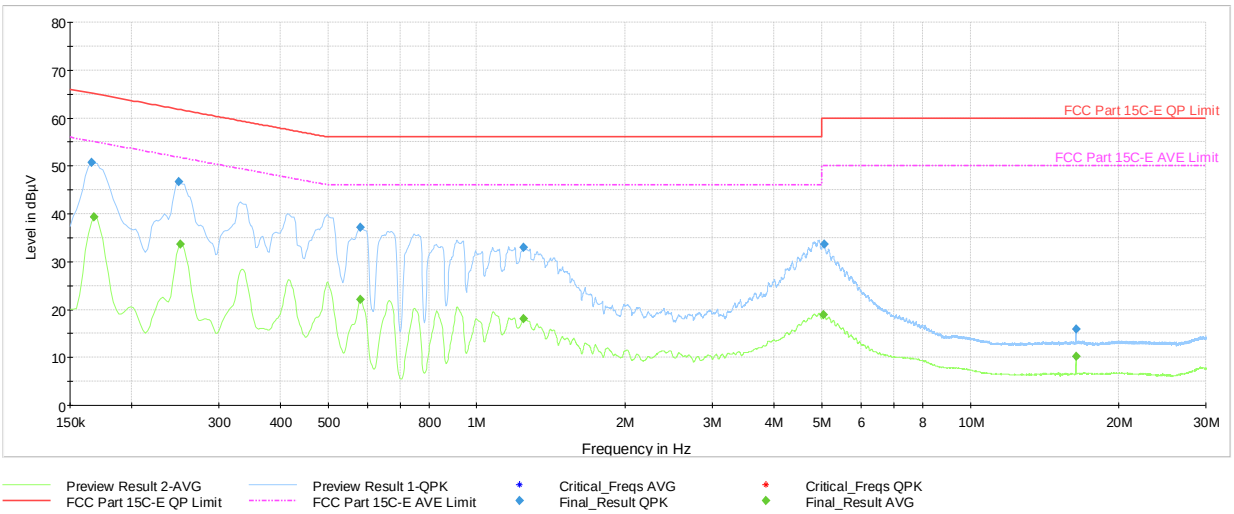


Plot 7-1184. AC Line Conducted Plot with 11ax SDM Primary UNII Band 5 – RU242 – Ch.1 (N) with AC/DC adaptor via USB-C cable with wire charger

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.17	FINAL	---	42.73	55.06	-12.33	N	GND
0.17	FINAL	54.06	---	64.95	-10.89	N	GND
0.25	FINAL	48.87	---	61.87	-13.00	N	GND
0.25	FINAL	---	36.25	51.72	-15.47	N	GND
0.58	FINAL	38.38	---	56.00	-17.62	N	GND
0.58	FINAL	---	22.92	46.00	-23.08	N	GND
1.27	FINAL	---	18.71	46.00	-27.29	N	GND
1.28	FINAL	33.43	---	56.00	-22.57	N	GND
5.17	FINAL	---	21.11	50.00	-28.89	N	GND
5.17	FINAL	34.75	---	60.00	-25.25	N	GND
29.37	FINAL	---	10.58	50.00	-39.42	N	GND
29.41	FINAL	16.84	---	60.00	-43.16	N	GND

Table 7-258. AC Line Conducted Data with 11ax SDM Primary UNII Band 5 – RU242 – Ch.1 (N) with AC/DC adaptor via USB-C cable with wire charger

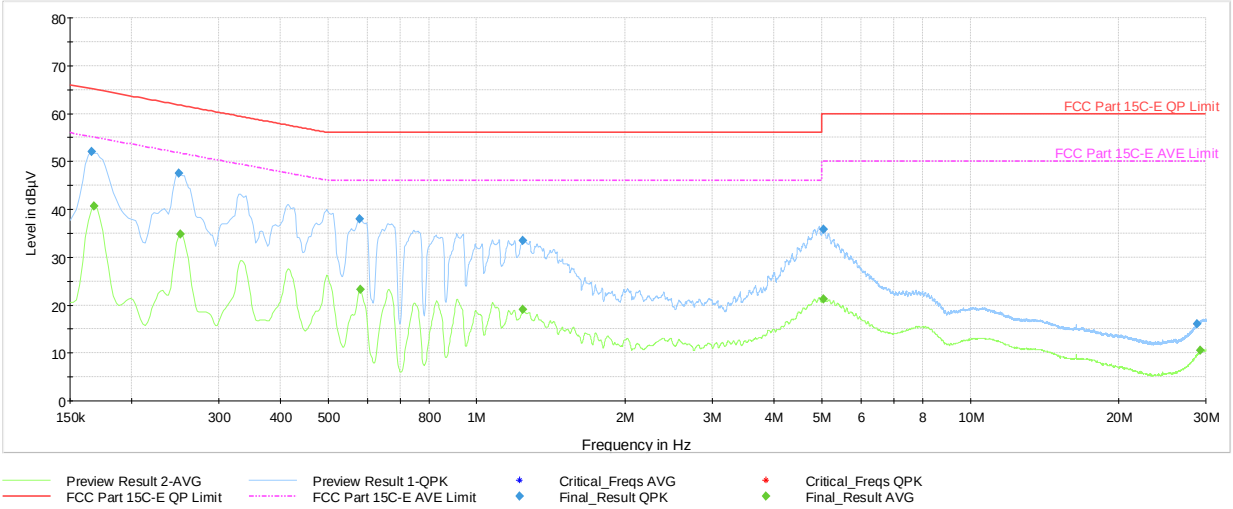
7.9.2 SDM Diversity Line-Conducted Emissions Measurement



Plot 7-1185. AC Line Conducted Plot with 11ax SDM Diversity UNII Band 5 – RU26 – Ch.1 (L1) with AC/DC adaptor via USB-C cable with wire charger

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.17	FINAL	50.74	---	65.17	-14.43	L1	GND
0.17	FINAL	---	39.28	55.06	-15.78	L1	GND
0.25	FINAL	46.68	---	61.79	-15.11	L1	GND
0.25	FINAL	---	33.67	51.72	-18.05	L1	GND
0.58	FINAL	---	22.12	46.00	-23.88	L1	GND
0.58	FINAL	37.17	---	56.00	-18.83	L1	GND
1.24	FINAL	33.00	---	56.00	-23.00	L1	GND
1.25	FINAL	---	18.11	46.00	-27.89	L1	GND
5.04	FINAL	---	18.85	50.00	-31.15	L1	GND
5.06	FINAL	33.67	---	60.00	-26.33	L1	GND
16.36	FINAL	---	10.28	50.00	-39.72	L1	GND
16.36	FINAL	15.82	---	60.00	-44.18	L1	GND

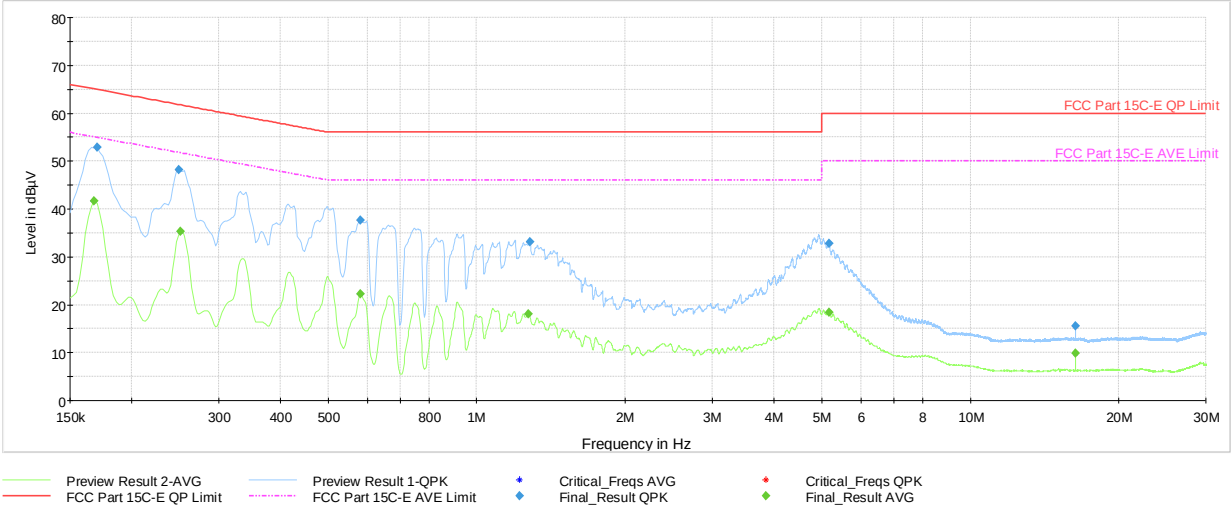
Table 7-259. AC Line Conducted Data with 11ax SDM Diversity UNII Band 5 – RU26 – Ch.1 (L1) with AC/DC adaptor via USB-C cable with wire charger



Plot 7-1186. AC Line Conducted Plot with 11ax SDM Diversity UNII Band 5 – RU26 – Ch.1 (N) with AC/DC adaptor via USB-C cable with wire charger

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.17	FINAL	52.04	---	65.17	-13.13	N	GND
0.17	FINAL	---	40.75	55.06	-14.31	N	GND
0.25	FINAL	47.61	---	61.79	-14.18	N	GND
0.25	FINAL	---	34.80	51.72	-16.92	N	GND
0.58	FINAL	38.03	---	56.00	-17.97	N	GND
0.58	FINAL	---	23.30	46.00	-22.70	N	GND
1.24	FINAL	33.50	---	56.00	-22.50	N	GND
1.24	FINAL	---	19.07	46.00	-26.93	N	GND
5.05	FINAL	35.73	---	60.00	-24.27	N	GND
5.05	FINAL	---	21.29	50.00	-28.71	N	GND
28.82	FINAL	16.03	---	60.00	-43.97	N	GND
29.24	FINAL	---	10.48	50.00	-39.52	N	GND

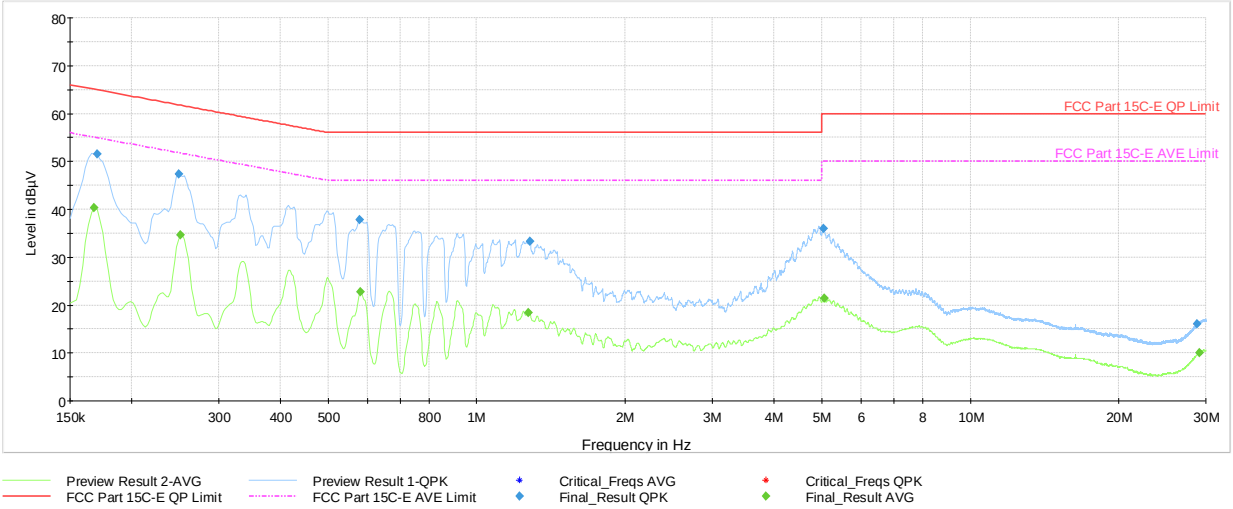
Table 7-260. AC Line Conducted Data with 11ax SDM Diversity UNII Band 5 – RU26 – Ch.1 (N) with AC/DC adaptor via USB-C cable with wire charger



Plot 7-1187. AC Line Conducted Plot with 11ax SDM Diversity UNII Band 5 – RU242 – Ch.1 (L1) with AC/DC Adapter to AC/DC adaptor via USB-C cable with wire charger

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.17	FINAL	---	41.60	55.06	-13.46	L1	GND
0.17	FINAL	52.84	---	64.95	-12.11	L1	GND
0.25	FINAL	48.24	---	61.79	-13.55	L1	GND
0.25	FINAL	---	35.38	51.72	-16.34	L1	GND
0.58	FINAL	37.72	---	56.00	-18.28	L1	GND
0.58	FINAL	---	22.28	46.00	-23.72	L1	GND
1.27	FINAL	---	18.00	46.00	-28.00	L1	GND
1.28	FINAL	33.08	---	56.00	-22.92	L1	GND
5.17	FINAL	32.74	---	60.00	-27.26	L1	GND
5.17	FINAL	---	18.42	50.00	-31.58	L1	GND
16.35	FINAL	---	9.93	50.00	-40.07	L1	GND
16.35	FINAL	15.62	---	60.00	-44.38	L1	GND

Table 7-261. AC Line Conducted Data with 11ax SDM Diversity UNII Band 5 – RU242 – Ch.1 (L1) with AC/DC adaptor via USB-C cable with wire charger



Plot 7-1188. AC Line Conducted Plot with 11ax SDM Diversity UNII Band 5 – RU242 – Ch.1 (N) with AC/DC adaptor via USB-C cable with wire charger

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.17	FINAL	---	40.35	55.06	-14.71	N	GND
0.17	FINAL	51.51	---	64.95	-13.44	N	GND
0.25	FINAL	47.31	---	61.79	-14.48	N	GND
0.25	FINAL	---	34.57	51.72	-17.15	N	GND
0.58	FINAL	37.76	---	56.00	-18.24	N	GND
0.58	FINAL	---	22.74	46.00	-23.26	N	GND
1.27	FINAL	---	18.43	46.00	-27.57	N	GND
1.28	FINAL	33.37	---	56.00	-22.63	N	GND
5.04	FINAL	35.97	---	60.00	-24.03	N	GND
5.05	FINAL	---	21.40	50.00	-28.60	N	GND
28.75	FINAL	16.03	---	60.00	-43.97	N	GND
29.09	FINAL	---	10.10	50.00	-39.90	N	GND

Table 7-262. AC Line Conducted Data with 11ax SDM Diversity UNII Band 5 – RU242 – Ch.1 (N) with AC/DC adaptor via USB-C cable with wire charger

7.10 Proper Power Adjustment, Client Devices Connected to a Standard Power Access Point

§15.407; RSS-248

Test Overview and Limits

A client device that connects to a Standard Power AP must limit its power to a minimum of 6 dB lower than its associated Standard Power access point's authorized transmit power. The term "authorized" means the AFC-approved power level for the AP to use on a particular channel.

Test Procedure Used

KDB 987594 D03 – Section L
ANSI C63.10-2020 – Section 12.4.3.2 Method PM-G
ANSI C63.10-2020 – Section 14.4 Measure-and-Sum Technique

Test Settings

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

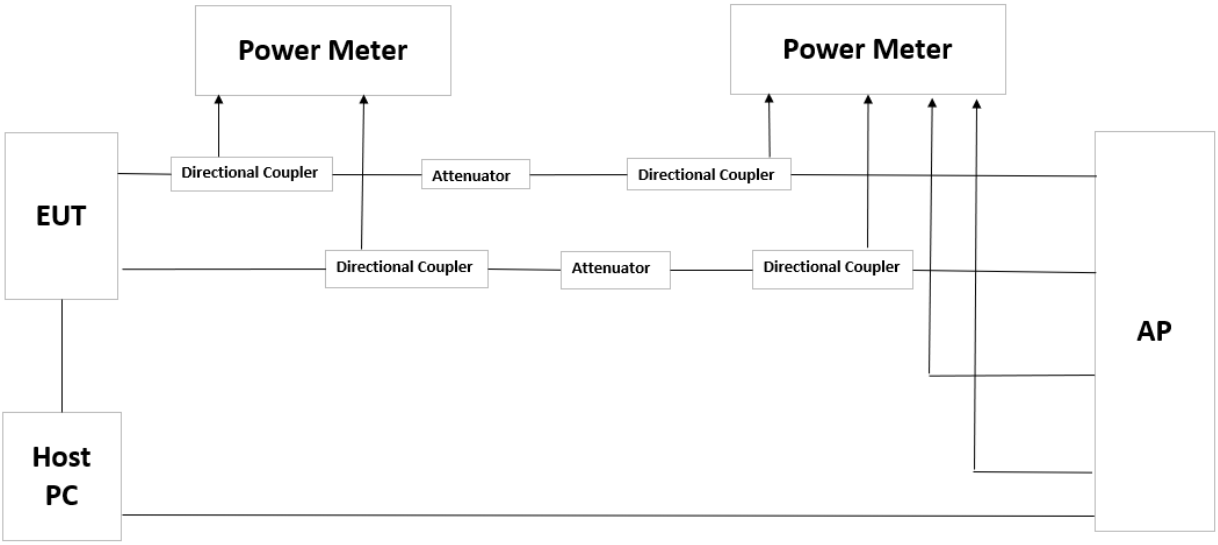


Figure 7-9. Test Instrument & Measurement Setup

Test Notes

1. AFC Limit was set to 36, 28 and 21 dBm EIRP.
2. Standard Power AP which was used in the test setup is not certified and it's a production version.
3. Standard Power AP specification is declared by Apple/manufacturer.

AFC Authorized Power (36dBm EIRP)

```
# wl afc_info
AFC information
Ver: 1, Type: 0x00/0,  Reg_info_type: 0x04/4,  Flags:0x0000/0,
[Req_info:0x00000000 (0u, 0, ""),
Expiry-in:86099sec,  Num-ch:1,  qdBm-offset:17, Num-entries:2 (1+1)
[
           dBm + offset (+4.25 dBm)
             -------------------
  Center-ch  |  EIRPc  |   PSDf  | Example chanspec
  37 / 0x25  |  +36.00 |  +23.00 |  0x5025 : 6g37
```

Figure 7-10. AP AFC EIRP/PSD Authorization by channel – 36dBm

Channel	Frequency (MHz)	Power Measured (dBm)			Correlated Gain (dBi)	Measured e.i.r.p (dBm)	Limit (dBm)	Margin (dB)
		Antenna 5T	Antenna 3b	Summed				
37	6135	12.45	9.61	14.27	3.70	17.97	30.00	-12.03

Table 7-263: EUT measured e.i.r.p (MIMO)

AFC Authorized Power (28dBm EIRP)

```
# wl afc_info
AFC information
Ver: 1, Type: 0x00/0,  Reg_info_type: 0x04/4,  Flags:0x0000/0,
Req_info:0x00000000 (0u, 0, ""),
[Expiry-in:86316sec,  Num-ch:1,  qdBm-offset:17, Num-entries:2 (1+1)

[           dBm + offset (+4.25 dBm)
              -------------------
   Center-ch   |   EIRPc   |    PSDf   | Example chanspec
   37 / 0x25   |   +28.00  |   +15.00  |   0x5025 : 6g37
```

Figure 7-11. AP AFC EIRP/PSD Authorization by channel – 28dBm

Channel	Frequency (MHz)	Power Measured (dBm)			Correlated Gain (dBi)	Measured e.i.r.p (dBm)	Limit (dBm)	Margin (dB)
		Antenna 5T	Antenna 3b	Summed				
37	6135	12.21	9.55	14.09	3.70	17.79	22.00	-4.21

Table 7-264: EUT measured e.i.r.p (MIMO)

AFC Authorized Power (21dBm EIRP)

```
[# wl afc_info
AFC information
Ver: 1, Type: 0x00/0,  Reg_info_type: 0x04/4,  Flags:0x0000/0,
Req_info:0x00000000 (0u, 0, ""),
Expiry-in:86395sec,  Num-ch:1,  qdBm-offset:17, Num-entries:2 (1+1)

           dBm + offset (+4.25 dBm)
             -------------------
  Center-ch  |  EIRPc  |   PSDf  | Example chanspec
  37 / 0x25  |  +21.00 |   +8.00 |  0x5025 : 6g37
```

Figure 7-12. AP AFC EIRP/PSD Authorization by channel – 28dBm

Antenna	Channel	Frequency (MHz)	Power Measured (dBm)	Antenna Gain (dBi)	Measured e.i.r.p (dBm)	Limit (dBm)	Margin (dB)
5T	37	6135	10.55	3.70	14.25	15.00	-0.75
3b	37	6135	9.48	0.20	9.68	15.00	-5.32

Table 7-265: EUT measured e.i.r.p (SISO)

7.11 Dual Client Test, Demonstration of Proper Power Adjustment based on Associated AP

§15.407; RSS-248

Test Overview and Limits

A client device may connect to a Standard Power AP with a maximum power level of 30 dBm EIRP. A client may also connect to a Low Power indoor AP, but the power level is limited to a maximum of 24 dBm EIRP. If a client has the flexibility to connect to both APs, verification is needed to show that it can distinguish between the two configurations, and then control the power levels accordingly.

Test Procedure Used

KDB 987594 D02 v03 – Section K
ANSI C63.10-2020 – Section 12.4.3.2 Method PM-G
ANSI C63.10-2020 – Section 14.4 Measure-and-Sum Technique

Test Settings

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

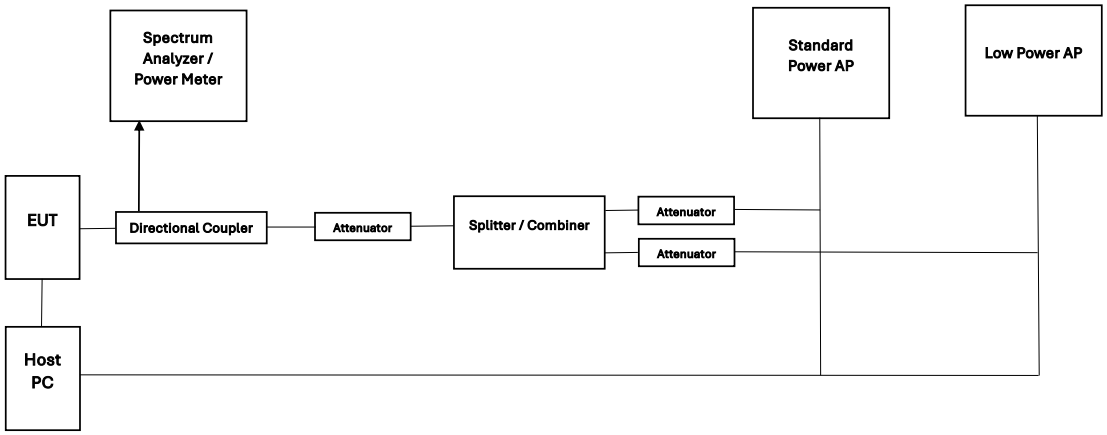
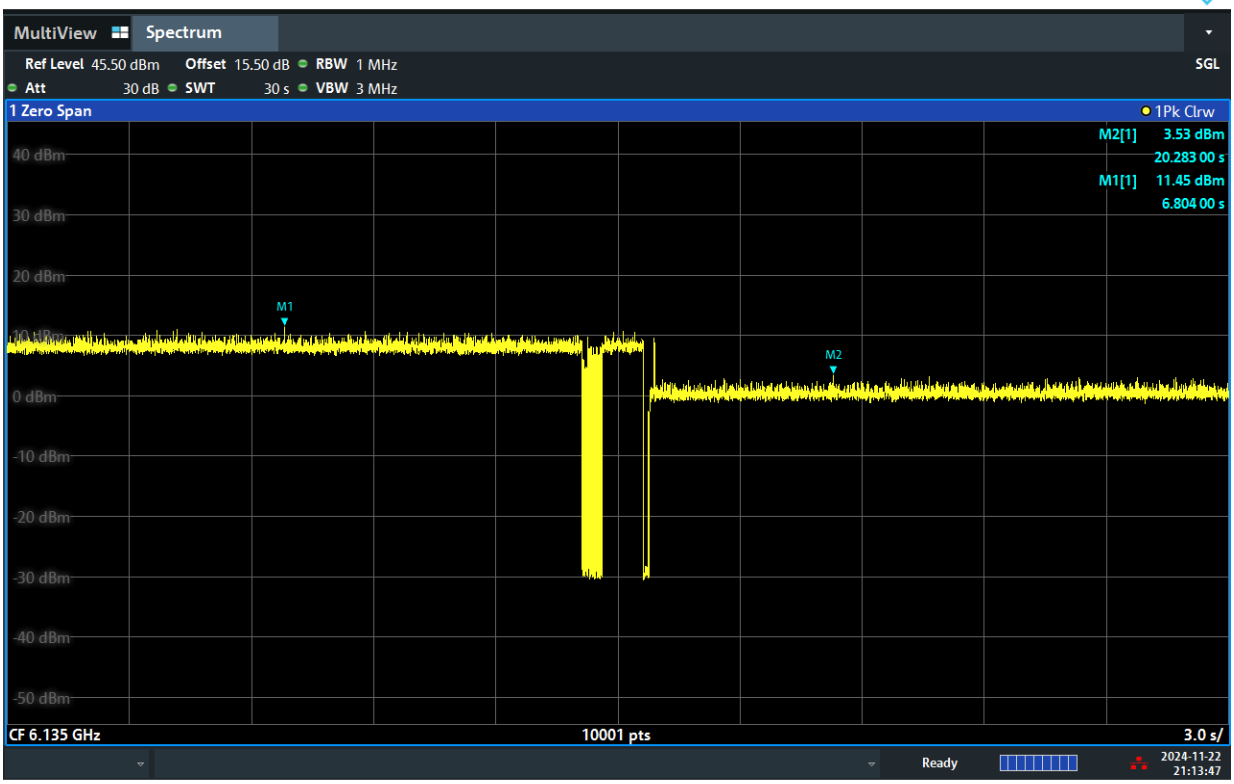


Figure 7-13. Test Instrument & Measurement Setup

Test Notes

1. Standard Power AP was set on highest power setting (36dBm EIRP)
2. Standard Power AP and Low Power Indoor AP were configured to transmit on same channel.
3. DUT was configured for SISO transmission so Antenna 5T was measured.



Plot 7-1189. Client device observation from Standard Power AP to Low Power Indoor AP

Antenna	Channel	Frequency (MHz)	Power Measured (dBm)	Antenna Gain (dBi)	Measured e.i.r.p (dBm)
5T	37	6135	11.93	3.7	15.63

Table 7-266: EUT measured e.i.r.p when established with Standard Power AP

Antenna	Channel	Frequency (MHz)	Power Measured (dBm)	Antenna Gain (dBi)	Measured e.i.r.p (dBm)
5T	37	6135	4.24	3.7	7.94

Table 7-267: EUT measured e.i.r.p when established with Low Power Indoor AP

8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Apple Tablet Device FCC ID: BCGA3269** and **IC: 579C-A3269** is in compliance with Part 15 Subpart E (15.407) of the FCC Rules and RSS-248 of the Innovation, Science and Economic Development Canada Rules.